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ORIGINAL LECTURES.

CLINICAL LECTURE ON PHTHISIS PULMONALIS.

Delivered at the Philadelphia Hospital

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Reported by WILLIAM H. MORRISON, M.D.

GENTLEMEN,—I wish to-day to call attention to a series of cases the discovery of a cure for which will certainly be rewarded by immortality. I refer to phthisis pulmonalis, or, as it is commonly called, consumption. It is not possible to bring before you a class of cases the interest of which is greater, or the practical importance of a correct understanding of which is more obvious. Up to the present time, it is to be regretted that we have found no specific remedy for this affection. I do not mean to say that advance has not been made in the treatment of phthisis, for this is not the case. At the same time, we are, in a large majority of cases at least, after a certain stage has been reached, utterly powerless to influence the disease favorably. I desire in the course of this lecture, if time permits, to illustrate at least three stages, and to endeavor to give you some insight into the pathology of the process, as it is understood to-day, on a correct notion of which will be based the successful treatment, if such is ever discovered; also to lay before you the treatment which I think is most useful.

The first patient is 32 years of age, unmarried, a driver and loader of wagons. He was admitted to the hospital on November 6, 1883. He knows nothing of his grandparents, but his parents are both living and well. He has brothers who are also in good health. This we should call a good family history. He had malarial fever when fifteen years old. Since then he has had almost no sickness. The present attack began about October 1, 1883, when, after exposure, he acquired a cough, which was accompanied by considerable expectoration. Shortly afterwards hemorrhage appeared, which continued at intervals for over a month. At times he would have three or four hemorrhages in a day, sometimes losing as much as a gill of blood. He gradually lost flesh and strength. He also suffered from shortness of breath.

Such a history of course suggests a physical examination of the chest. This I shall now make before you. It is desirable that all starched shirts should be removed; but, on the other hand, it is not necessary, or even desirable, that a person to be thus examined should be completely stripped. A thin undershirt is the most suitable medium through which to make an examination, except for inspection, for which the chest should be bared.

Inspection here reveals no striking difference in the degree of movement on the two sides, nor is there retraction of the chest-wall on one side compared with the other.

Now as to the results of *percussion*. First, on the clavicle. On the left side there is evident flatness in this situation. Above the clavicle there is impaired resonance. Below the clavicle the resonance is impaired, and this impairment of resonance continues downward as low as the fourth rib. In the left axilla the percussion-note is good. Let us now examine the back of the left chest. The thick walls of the posterior part of the chest will of course give less resonance than the thin anterior walls. Still, we find a decided difference in percussing above the spine of the scapula on the two sides. There is marked flatness on the left side, and the resonance is impaired as low as the angle of the scapula. On the right side, both in front and behind, the resonance is good.

I shall now *auscultate* the chest. In practising auscultation, the direct application of the ear is more satisfactory than the mediate method by a stethoscope. It is only when we desire to localize sounds or examine the heart that a stethoscope is of especial advantage. I find that the respiratory murmur is feeble both in inspiration and in expiration and on both sides, but more particularly on the left, below the clavicle. This is somewhat different from what we should have expected, but I shall try to explain the cause of this later on. There is the same feebleness of respiration posteriorly.

As to *vocal fremitus*, I can scarcely detect any difference in the amount of vibra-

tion, which is feeble on both sides, below the clavicles. In point of fact, the vocal fremitus is possibly a little more distinct on the right than on the left side. These physical signs are not precisely what I expected to find, and make the case less simple than I should desire for the purpose of illustration.

But what do these physical signs teach us? We have found decided impairment of resonance on the left side, both anteriorly and posteriorly, which means that the normal vesicular structure of the lung has in some way been substituted by solid material. The feebleness of respiration upon the left side, as compared with the right side, may be due in the early stages of the disease to the interference with the entrance of air into the vesicles, thus preventing their dilatation and the respiratory murmur incident to this act in health. Or it may be due to the interposition of a thickened pleura. There is one sign which, at first thought, is inconsistent with the view of simple consolidation; that is, the vocal fremitus is slightly diminished, rather than increased, as we might expect. This diminished fremitus is also probably due to a thickened pleura. There has probably been a plastic pleurisy, which has caused this thickening, this interference with the transmission of vibrations. Such thickening also interferes with the conduction of the respiratory sounds. More frequently there is, with dulness on percussion, increased vocal fremitus and bronchial breathing, or, where the vesicular element of the respiratory sound is still present, there is a roughening of the normal respiratory sound with prolonged expiration, known as broncho-vesicular breathing. This is not present in this case.

I believe, however, that there is a process of consolidation going on in the left lung, and that it is a phthisical process. What is the nature of this solid material which has been deposited? You will probably answer that it is tubercular. The answer is correct, but may be met with another question, What is tubercular material? The older views made it a special substance poured out from the blood into the air-vesicles. To-day it is mainly regarded as inflammatory. I certainly think that the tubercular process is inflammatory, but the product is a specific inflammatory new formation, because it is due to a specific poison. That is a specific inflammation which results from a specific cause, distinct and separate from the ordinary causes of inflammation. Thus, we have syphilitic, tubercular, and scrofulous inflammations. All these are specific, because they are produced by causes distinct from those of ordinary inflammation. These causes of inflammation occasion products which are more or less peculiar.

There is every degree in the distinctiveness of this tubercular process, from that in which it is readily recognized by its local peculiarities to that in which it is barely distinguishable.

As to the specific agent which is responsible for it, views are not altogether settled, and it would not be profitable to discuss them at too great length. According to some it is a special virus, while according to another view the phenomena are the result of a peculiarity of the individual, either inherited or acquired, as a result of which inflammation in the lungs tends to take on this character. Usually, when a person in health has bronchitis, the cough and expectoration gradually diminish, and the inflammation passes away in a short time. In other individuals the cough hangs on, and the expectoration does not diminish, but is peculiarly thick and inspissated. Sooner or later, in such a case, a feverish condition manifests itself, the cough and expectoration grow worse, and shortness of breath appears. On examining the chest, impairment of resonance is found, as in this patient. The first cough is the result of bronchitis; the later cough is due partly to bronchitis and partly to irritation from the tubercular deposit.

If the lung were examined in the incipient stage of phthisis, the evidences of bronchitis or inflammation of the mucous lining of the bronchi would be first found. After this has existed for a certain length of time there is infiltration of the walls of the air-vesicles, and particularly at the angles of the vesicles. These are filled up with the inflammatory new formation, which is tubercular, and which may present the microscopical characteristics, more or less distinctive, of tubercle. With this, however, we have nothing to do to-day, but shall confine ourselves to the clinical aspects of the disease. Nor shall we discuss the infectious theory of tuberculosis, or have anything to say at present as to its relations to the *bacillus tuberculosis*, about which so much is being said and written.

How should such a deposit affect the physical signs? In the first place, in the beginning, there is an impediment to the entrance of air, and, as a result, feebleness of respiration. This feebleness of respiration appears before the broncho-vesicular breathing. There is also impairment of resonance, on account of the presence of solid matter.

From this initial stage there are two ways in which the tubercular process may extend, one which is peripheral or centrifugal, and a second which is central or centripetal. In the first, or peripheral, mode of extension the vesicles become more and more involved, until large areas of vesicular structure are substituted by the solid tubercular matter. Remember, however, that the deposit is not directly into the cavity of the vesicle. It takes place first in the walls of the vesicles, and as these become thicker they encroach more and more upon the lumen of the vesicles and infundibula, until they are converted into a solid mass, which gives rise to the dulness on percussion, and the bronchial breathing. The air is shut out from the air-vesicles, and the only sound heard is that produced in the bronchi, which is conducted to the ear by the solidified lung. This mode of extension causes the rapid forms of phthisis, which terminate in from six weeks to one year.

The second mode of extension is centripetal. In this form the disease travels towards the root of the lung along the bronchi, the walls of which become infiltrated. The vesicles are thus left comparatively intact, while there is peri-bronchial infiltration with tubercular matter. This mode of development is less rapid than the peripheral, and gives rise to the cases of chronic phthisis which last from two to twelve years. In the centrifugal process the essential structure of the lung is affected, but in the centripetal the cells are less involved, while the walls of the bronchi are largely implicated. Hence the longer duration of the latter.

There is no consumption which is not preceded by bronchitis, except, probably, acute general miliary tuberculosis. Not very long ago it was thought that bronchitis and tuberculosis were quite independent of each other; but to-day we are satisfied that every consumption, with the exception just mentioned, begins with bronchitis. It is this which is the proximate cause of the tubercular process, although it must be superimposed upon the tendency above referred to.

The second patient whom I show you illustrates the effects of the infiltration of large areas with this tuberculous matter; as a result of which there is flatness on percussion over a large portion of the right side anteriorly. Instead of feebleness of respiration and diminished vocal fremitus, there is bronchial breathing and increased vocal fremitus.

The next patient illustrates the third stage of the disease, the formation of cavities. As the infiltration goes on, and larger areas of the lung-tissue are involved, the tubercular matter finds difficulty in being properly nourished, and, as a result, dies. The central parts, as a rule, die first. The cells which make up the deposit undergo fatty degeneration, softening, and liquefaction. In typical cases, as soon as the area of consolidation is large enough to interfere with the proper nourishment of the inflammatory mass, it dies, softens, and liquefies, causing a cavity. This does not always take place in the same way. Softening usually begins when the cheesy tubercular mass reaches half an inch to an inch in diameter. The softened interior of the deposit must communicate with a bronchial tube before the signs of a cavity manifest themselves. Sometimes the softening begins with ulceration of the mucous membrane of a bronchial tube, the ulcer grows larger, the mass is brought into communication with the air; it softens, breaks down, and is carried away in the expectoration.

As stated, the case now presented illustrates the softening process. The resonance over a cavity may be impaired. This is due to the existence of consolidated lung-tissue around the cavity. If the vomica is large enough, the resonance will be tympanitic, and sometimes the cracked-pot sound, which is diagnostic of a cavity, may be developed. On the left side of this man's chest we get tympanitic resonance. In order to get tympany it is necessary to percuss heavily. On auscultation, I hear crackling at the left apex, produced by air passing into softened matter.

According as the disease is rapid or slow these stages are reached sooner or later. For instance, the sickness of the first patient dates back to the 1st of October, 1883; that of the second began

three years ago; while in the third man the disease began two years ago. While the general statement that the more advanced the disease the longer it has lasted is true, yet its progress is more rapid in some cases than in others.

The hour has so nearly expired that I shall have but little time to devote to the consideration of the treatment; but I shall do what I can. The important point to remember in connection with the treatment of consumption is that it is an inflammation. It is true that it is a specific inflammation, and on that account more difficult to treat. Some forms of specific inflammation are easily treated, because we have specific remedies for them; syphilitic inflammation is one of this kind, because we have in iodide of potassium and mercury specifics for this disease. Some day we may discover a specific remedy for the specific inflammation of consumption,—a remedy which will give us the same power over that disease which we now possess over syphilis. Until such specific has been found, we must treat the disease as we should any other inflammation. As this is not a sthenic inflammation, we would, of course, not bleed; but we would use that which is found to be so useful in other forms of chronic inflammation,—namely, counter-irritation. To my mind, the first rational treatment in cases of consumption is counter-irritation. This may be done in various ways. If you wish to do it gently and not alarm the patient, mustard might be employed, or iodine or croton-oil may be used. The best method is, I think, the application of a blister over the consolidated lung. It is the best remedy not only for the inflammation, but for the relief of the worst symptom of the disease. The very best cough-medicine, and often the only one which will accomplish the result, is a blister. We have now in our wards a case of consumption in which the cough was most troublesome for six or eight weeks, and cough-medicines of all kinds had failed; but in twenty-four hours the symptom was relieved by a blister.

These patients are always run down. Their reparative powers are poor, and it is necessary to employ the so-called supporting treatment. Every case of consumption which can bear it should take cod-liver oil. There is nothing which approaches nearer a specific remedy for this disease than does cod-liver oil. It does good in many cases, although not all are benefited by it, and some cannot take it in any form. Where it cannot be used, cream or rich milk should be substituted for it. In addition, the patient should have the most favorable hygienic surroundings which it is possible to give him. So far as certain so-called specific remedies, such as the hypophosphites and the like, are concerned, I must say that I have never seen any benefit whatever from their use. Counter-irritation, cod-liver oil, nutritive food, and correct hygiene are the most successful remedies.

If the cough is not relieved by a blister, it may be necessary to give some form of cough-medicine. It unfortunately happens that the remedies which are useful in allaying the cough are generally those which derange the stomach. In cough-medicines for phthisis it is necessary to give opium in some form. In giving morphia for this purpose, it is often better to give one large dose than a number of smaller ones. This, however, often deranges the stomach and makes it impossible for the patient to take that nutritious food which is absolutely necessary to the cure of phthisis. Where there is a large amount of expectoration, a stimulant expectorant, as the carbonate or chloride of ammonium, should be given to aid in the bringing up of the secretion. A stimulant expectorant of great value is whiskey. A half an ounce of whiskey is often of great service in causing contraction of the muscles of the small bronchi and forcing up the expectoration. It is to be remembered that a certain amount of cough is necessary in phthisis where there is softening and accumulation in the bronchial tubes, in order that the secretion may be removed. If the patient cannot cough he will suffocate.

Another important matter, which should perhaps have preceded what I have said about the treatment of actual phthisis, is the treatment of the bronchitis which precedes the development of phthisis. I have already said that all cases of consumption are preceded by bronchitis. This bronchitis should be treated vigorously, and, if the cough continues, do not be afraid to put a blister over the lung. If these patients are carefully and actively treated, the number of cases of phthisis will, I think, be greatly diminished.

ORIGINAL COMMUNICATIONS.

THE BACILLUS TUBERCULOSIS AND THE ETIOLOGY OF TUBERCULOSIS.—IS CONSUMPTION CONTAGIOUS?

SECOND COMMUNICATION.

Read before the Philadelphia County Medical Society, November 14, 1883,

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(Continued from page 345.)

II.—THE PREDISPOSITION.

HAVING shown that for the production of tuberculosis we need a special soil, and that the irritant is only of secondary significance, some inquiry into the nature of this soil is necessary.

The question of the predisposition to tuberculosis, as it stands at present, must be considered from three aspects:

1. The clinical aspect.
2. The anatomical aspect.
3. The bacteridian or parasitic aspect.

The consideration of the clinical aspect of the predisposition to tuberculosis is invaluable, as it rests mainly on actual observation, on demonstrated clinical facts, and on conclusions drawn from statistics.

From time immemorial, a clinically well-defined condition of the system, known as the strumous diathesis in its various forms, has been recognized. This condition will be considered later on.

There are a number of ailments which, from the experience of clinicians, are known to have a great, direct or indirect, influence in the development of general tuberculosis and pulmonary phthisis, or are known to create conditions of the system that predispose it to this malady. Such are syphilis, inflammation of serous membranes, bronchitis, croupous pneumonia, diabetes, the exanthemata (especially measles and typhoid fever), deformities of the skeleton, rickets, cerebral and spinal diseases of various kinds, dyspepsia, the puerperal state, uterine diseases, prolonged nursing of children, onanism, change of climate, continuous loss of sleep, distress, etc.

That exhaustion, exposure, deprivation of food, and other hardships of campaign-life, etc., are prominent etiological factors in the production of pulmonary consumption is learned from the accounts of military surgeons, who observe among young, robust soldiers a remarkable increase in the morbility and the mortality of phthisis during and immediately after the close of a war. Such observations have been made in the Franco-Prussian and Turko-Russian campaigns. The fact that consumptive soldiers are not allowed to enter upon a campaign (certainly not in Germany and Russia) excludes here the probability of contagion.

Statistics also show the remarkable prevalence of phthisis in persons of certain occupations, such as stone-cutters, miners, cigar-makers, weavers, telegraph-operators, book-keepers, and persons engaged in certain other occupations of a more or less sedentary nature. It is more natural to suppose that the disease, or the predisposition to it, is created by the character and the conditions of the occupation, than that a contagion should affect preferably shoemakers, miners, or soldiers in the battle-field. Again, in most phthisical patients the beginning of the disease can plainly be attributed to an exposure, to "a cold."

On the other hand, there are pathological conditions or diseases which appear to prevent the development of phthisis and tuberculosis in general. It is an established clinical fact that phthisis is extremely rarely, if ever, associated with mitral heart-disease; and, from my own observations, I believe that phthisis is rarely coincident with tumors. For the latter circumstance I can offer no explanation; nor is there any statement to this effect in literature. Rindfleisch has suggested that heart-disease prevents the development of phthisis by inducing repeated slow congestions of the lungs, these congestions producing an overgrowth of the muscular tissue of the bronchioles and air-vesicles, which thus gains strength for repelling the exudates following inflammation.

If tuberculosis were dependent upon a contagium for its development, neither heart-disease nor tumor-growth, nor any condition of the organism, could ever prevent its occurrence.

All the clinical facts above referred to prove definitely the necessity for a predisposition for the development of tubercular disease, and militate against the necessity of a contagium.

The anatomical aspect of the question—the morphology of the soil in which tubercle develops—is the most important aspect.

Beneke* tries to explain the disposition to tuberculosis by a disproportion between the size of the heart and blood-vessels and other organs to the bulk of the body.

Schottelius† made recently some interesting observations concerning the mode of termination of the smallest bronchioles and their relation to the lung-acini in different animals. He found that in the carnivora the entrance of the bronchioles into the acini presented very small apertures, so that the air-vesicles were not easily accessible to irritants; while in the herbivora the terminal bronchial terminations were quite wide, thus permitting the free entrance of irritants. He states that in man the bronchial terminations congenitally approach sometimes those of the carnivora, and sometimes those of the herbivora. In the latter type he believes he has found an anatomical explanation for the predisposition in some individuals to pulmonary tuberculosis.‡ Weigert, of Leipsic (one of the most enthusiastic germ-theorists), properly remarks upon the observation of Schottelius, that it does not explain the predisposition, as the same animals will react upon the introduction of the "poison of tuberculosis" into any other part of the body, where the bronchials do not come into play.

My own studies upon the minute anatomy of the tissues of man and of animals predisposed to tuberculosis extended over a large amount of material, and gave results which, to my mind, satisfactorily explained this condition. These results I announced at a meeting of this Society in October, 1882.

The anatomical peculiarity observed in either man or animals, whether inherited or acquired, I first showed to be, briefly stated, as follows: all the tissues of the body approach somewhat an embryonal type; they are peculiarly rich in nuclei and young cells, and the lymph-spaces of the connective tissues are narrower, fewer in number, and show a great many more cellular elements in the scrofulous than in the non-scrofulous. So far, subsequent observations of others agree with mine. Objections are raised only as to the direct relation between these structural peculiarities and tuberculosis. Here I must state that I only suggested, and never asserted, the necessity of such a relation. It is quite possible that there are some other and more striking peculiarities in the morphology of scrofulous animals yet undiscovered. This much I can, however, reassert to-day: that tuberculosis usually ensues when a simple inflammation is set up by any kind of injury, in animals with the structural peculiarity which I have described; but that tuberculosis cannot be produced in animals that do not have this structural peculiarity, so far as my experiments show, unless the injury is inflicted upon serous membranes.

For the details of my researches in this direction I must refer to my first paper upon this subject.§

Koch asserts that the structural peculiarities of the tissues which I described can have no etiological relation to tuberculosis, because an animal not possessed of such tissue-peculiarity—the cat—is easily inoculable by tuberculous material. Here I must differ from Koch, as in my experience with cats this is not the case; and, again, Koch brings no proof for his assertion, and I am unaware that he or anybody else produced tuberculosis in a cat, except by inoculation into some serous cavity. That inoculations into serous membranes prove nothing for tuberculosis, as I have shown conclusively, Koch still seems to fail to see. But here is a way in which cats may become tuberculous with or without the bacillus. In one instance we kept one of the cats in a close box, *deprived* of liberty, with good air, the comforts of life, motion, and sufficient food; she also had been inoculated with diphtheritic material eight months previously, but had recovered. After the lapse of a year the cat was set free, but was accidentally killed, and was found to be affected by general tuberculosis in a high degree.

This, in my opinion, corresponds fully to the conditions in which a healthy young woman is placed, and finally becomes scrofulous, and then tuberculous, from a simple cold, after being the faithful

* Die erste Ueberwinterung in Norderney, Norden, 1882.

† Virchow's Archiv, vol. xci., 1883.

‡ The method of investigating this condition is not without interest. The vesicular structure of the lung was injected, through the bronchi, with a resinous melted mass, which, on cooling, presented moulds of the bronchioles, in connection with their characteristic infundibula and acini.

§ Phila. Med. Times, vol. xiii. p. 109.

nurse for a couple of years of a consumptive husband.

On the other hand, there is full reason to believe, as it is in accordance with experience, that young scrofulous persons, under proper conditions, may become normal individuals,—*i.e.*, may lose or outgrow the predisposition to tuberculosis. (I have dwelt upon this in my first communication on this subject.)

The scrofulous habit, and consequently also phthisis, may skip a generation, and does not invariably embrace all members of a family. It has been observed that parents may have at first healthy children without any vice, who grow up well, and subsequently the same parents, without being phthisical (but perhaps otherwise becoming deficient in health), may have other children that exhibit a full scrofulous habit. But even the reverse has been observed.

It would be highly desirable if physiologists would furnish some experimental observations on the circulation of the plasma in the lymph-spaces. This is, to my mind, a circulation or movement of vital juices in the tissues, which, for the well-being of the individual, is of importance next to that of the blood. These important channels, the lymph-spaces, are known to regulate the blood-pressure, carry and breed (white blood-corpuscles) food for the tissues, lubricate tissues, and relieve the body if any of its parts are damaged by injury of any character, of inflammatory exudates, dropsy, etc. These channels are nearly blocked up, nearly useless, in the *scrofulous*, and hence cannot perform their functions, thus modifying materially the condition and the fate of the individual in case of disease.

The term "*scrofulous*," which I retain for describing the above-stated anatomical peculiarity of animals and individuals, is as good as any other term; moreover, it is known by all as designating the "predisposition" to tuberculosis. Scrofulosis should be called a *condition*, and not a disease, as it has its hereditary and widely-distributed type (a natural one) in man, and its homologue in some normal animals (rabbit, guinea-pig, etc.). It must be remembered that the scrofulous individual acquires certain lesions, such as enlargements of lymphatic glands, cold abscesses, caries, long-standing catarrhs of various kinds, skin-eruption, and certain deformities of bones, only under the influence of injuries, or of the same agencies which in the non-scrofulous individual lead to transient and curable affections.

Virchow designates simple, permanent enlargement (hyperplasia) of lymphatic glands, with or without cheesy change, as "scrofulous," in contradistinction to "tuberculous" lymphatic glands, which contain miliary tubercle nodes (heteroplasia), and which also undergo cheesy change.

There is nothing called "scrofulous" or "scrofulosis" by some which by others is not also called "tubercle" or "tuberculosis." There are, strictly speaking, no scrofulous products, but only tuberculous products. The traditional term "scrofulosis" is variously used and interpreted, although it is not evident that any one means by it anything anatomically well defined.

Others take matters easier, calling everything *tuberculous* that contains tubercle-bacilli, and calling scrofulous all cheesy matters in which bacilli are absent.

There is still a third aspect of this question,—viz., the parasitic or bacillary theory of the predisposition to tuberculosis. As I mentioned in the earlier part of this paper, Baumgarten, Marschant, and several others recently brought forward the view that not only tuberculosis but even the predisposition to tuberculosis is to be explained by the susceptibility of an individual to bacilli. Under this hypothesis, the inherited scrofulous tendency in individuals is created through the mediation of the bacilli. It is supposed that the bacilli or their spores may be conveyed to the ovum by the organism of the mother, or in utero by the spermatozoids of the father. Furthermore, they say, inheritance is to be explained in no other way than by a bacillary infection of the infant through the milk of the nursing mother, and by subsequent living together of children and phthisical parents. We may exclude this view altogether from consideration, as it has not been proved. Besides, it is not in accordance with facts from observation. It is as contrary to biological laws to accuse parasites of the transmission of a predisposition to tuberculosis as it would be for that of epilepsy. Hence we may dispose of this view as an unfounded, absurd hypothesis.

I am not opposed to the germ-theory of disease where it has its well-founded and proper application. Bacteridian studies

have contributed largely to our knowledge of a certain class of pathological processes and lesions. But misinterpretations of the significance of bacteria, bacillary speculations without occasion for them and without any proper application to the subject, are a check to the progress of medical science. The questions of the predisposition to, and the causation of, tuberculosis demand a great deal more of solid pathologico-anatomical and experimental studies; they can by no means be regarded as settled, and least of all through the discovery of a bacillus inhabiting necrotic tubercular tissues.

III.—TUBERCULOSIS, WITHOUT PREDISPOSITION, DUE TO INFLAMMATION OF SEROUS MEMBRANES.

For some years I have felt much interested in the question whether or not simple inflammation of serous membranes could lead to tuberculosis in the non-scrofulous, that is, in persons who have no family history of tubercular disease; and I would like to ask the opinion of the members of the Society upon this question. It is well known that there may be primary tuberculosis of serous membranes, producing secondary inflammations; and, on the other hand, tuberculosis secondary to adhesive pleurisy or peritonitis is also common in serous membranes. The general belief, however, is that whenever tubercular disease in either case occurs, if not secondary to phthisis or tubercular disease elsewhere, a strumous or scrofulous condition is required.

Traumatic injuries of joints are known to lead often to fungoid (tubercular) synovitis and general tuberculosis, occasionally in individuals with good family history. Simple injuries of the eyeball (the anterior chamber of which, as well as the joints, is lined by serous membranes), under conditions as above stated, have also been known to lead to tuberculosis, as recorded by Wolfe (*Brit. Med. Jour.*, March, 1882) and Gradenigo (*Ann. d' Oculistique*, 1870).*

Dr. M. Litten,† of Berlin, was the first to publish some accounts which demonstrate that miliary tuberculosis may be caused directly and primarily by pleurisy and inflammation of other serous membranes in persons with no phthisical history, and without any cheesy masses being formed in any part of the body. In his (Litten's) experience this was particularly the case when there was a rapid reabsorption of the exudates in case of chronic pleurisy, or if repeated removal of the fluid of a hydrothorax or ascites by tapping had been performed. He records several well-studied cases of that kind, accompanied by autopsy-records. Litten's observations at no time, however, received the attention which they deserved.

Not only clinically but also pathologically this part of the tuberculosis question is rather neglected. In text-books of pathology the occurrence of primary tubercle in adhesive bands is incidentally mentioned, but no special consideration is devoted to its etiology and manifestations.

Upon the autopsy-table I have repeatedly met with subjects with exquisite primary tubercular peritonitis, pleurisy, or pericarditis, which, upon inquiry into the history of the cases, failed to reveal any phthisical or scrofulous history. The products of these inflammations were often plastic in character, not unlike those of fungoid synovitis. The appearances sometimes present themselves particularly strikingly in the peritoneum; all the viscera may be glued together by plastic material into a solid mass. The omentum is usually retracted and matted together into a solid cord or mass, which, lying parallel with the transverse colon, reaches across the abdominal cavity, and may have a thickness of from two to four inches; the mesenteric and other lymphatic glands are usually normal, but sometimes in advanced cases may be much enlarged and more or less cheesy. The entire absence of any cheesy focus in the body is, however, often a conspicuous feature in these cases.

Some pathologists deny the tubercular nature of these formations and of the flat nodular masses which cover the serous

* Primary tuberculosis of the uveal tract was described lately by Eparon (*Arch. d' Ophthalmol.*, November-December, 1883). He obtained his material for investigation from the clinic of Landolt. His observation was confined to those cases in which the uveal tract was primarily and exclusively the seat of a tuberculous infiltration, usually of slow progress. In one case the tuberculous infiltration was confined to the anterior part of the uveal tract, and at first so deep in the tissues as to be inaccessible to direct examination. It developed rapidly, however, and within a month had caused such grave alterations in the eye as to necessitate its enucleation. There was, however, no tuberculous point of infiltration in any other part of the body, and the patient was cured by the enucleation of the eye.

† M. Litten, Sammlung Klin. Vorträge, No. 119: Ueber acute Miliartuberculose, 1877. For further references, see Wiener Med. Presse, No. 36, 1882; Charité Annalen, vol. vii., Berlin; Krankheiten der Respirations-Organe, in Virchow's Handb. der Spec. Path. und Ther., vol. i.; Virchow, Geschwülste, vol. ii. p. 725, etc.; also, Formad, Transactions of the Philadelphia County Medical Society, and of the Pathological Society, for 1882–83.

surfaces in these cases. It is true that fibroid changes predominate in these formations; but numerous tubercle nodules, with all the necessary attributes, epithelioid and giant cells, and necrotic changes, were plainly seen in all cases which I had occasion to examine. Secondary miliary tubercles of quite recent date are also found thickly strewed locally in these parts, and may or may not be seen in the lungs and other organs. As a rule, there is more or less ascites in these cases. My colleague, Dr. E. O. Shakespeare, has recorded similar cases, and Dr. Morris Longstreth tells me also that he has seen and studied such cases. Dr. Mitchell Prudden describes (*New York Medical Record*, June 16, 1883) an allied case.

In chronic adhesive pleurisy there occur similar primary tubercular formations in the organized plastic exudate, which in some cases give rise to secondary (miliary) tuberculosis of other organs. The lungs may be perfectly normal in all parts, and show only peripherally, just below or bordering the pleura, some indurations of gray color made up of recent tubercle tissue. These young tubercle infiltrations may in some cases be seen penetrating into the substance of the lung, as in a pleuro- or dissecting-pneumonia, directly from the old tubercular masses of the adjacent pleural membrane.

I have also examined several cases of plastic adhesive pericarditis, and found the plastic vegetations in this lesion to contain tubercles: two of these had coincident pleuritic lesions.

Cases which came under my observation during the last eighteen months—*i.e.*, since the opening of the bacillary campaign—were, of course, carefully examined for bacilli, and the results may be summarized as follows: bacilli were found in most of the lesions, if the tubercular disease of serous membranes was accompanied by cavities and cheesy masses in the lung, or by tubercular ulceration of the intestines, and if cheesy changes in general were prominent; but no bacilli could be discovered, even after repeated and careful search, in any of the lesions of four cases of primary peritoneal and pleuritic tuberculosis examined. In none of these latter four cases were there any conspicuous cheesy changes in any organ, and no cavities or marked hepatizations in the lung, and no intestinal ulcers, although in two there was slight pulmonary miliary tuberculosis. These cases will be recorded in detail in a future publication.

I have also seen several cases of primary tubercular pleurisy and pericarditis, and a few of primary tubercular peritonitis, in the pathological institutes of Virchow in Berlin and of Von Recklinghausen in Strasburg. I questioned these foremost men of pathology concerning the etiology of these lesions. They, as well as Rindfleisch, of Würzburg, told me personally their opinion, stating their firm belief that these lesions often directly originated from simple chronic inflammatory changes, without the agency of any cheesy focus or any specific agencies whatsoever.

Birch-Hirschfeld also states, in his book on pathological anatomy (page 183), that "nearly every exudative pericarditis and pleurisy leads to a local tuberculosis, if it takes a chronic course."

How often primary tubercular lesions of serous membranes occur in non-scrofulous persons, and whether this is the only form of tuberculosis in this class of persons, is, of course, a matter of speculation, until thorough statistics and careful studies are made in this direction. Nevertheless, it is a demonstrated fact, as I will show farther on, that primary tuberculosis can be produced in the peritoneum of animals, such as the dog, which are proved not to have any scrofulous tendency. I have seen this myself, and have seen O. C. Robinson in my laboratory succeed in this experiment by the introduction of simple irritants into the peritoneal cavity. Koch also never succeeded, even with the bacillus, in producing tuberculosis in the dog, except when using the peritoneal cavity or the anterior chamber of the eye (which is also a serous sac) as a point for inoculation.

Here is room for hypothesis. I would prefer to believe that tuberculosis could occur only in scrofulous persons, as this would better agree with the *scrofulous anatomy*. It is, however, possible that a scrofulous anatomy of the tissues may be artificially established by the blocking up of the lymph-spaces of the serous membranes by fibrin and molecular *débris* suspended in the serum which is being reabsorbed. This would then be a mechanical process, and not one of infection. If an inflammation occur in serous membranes, resolution becomes difficult through the peculiarity of the exudate. This is

fibrinous mainly, and, forming extensive, usually permanent organized deposits, it impairs the function of serous surfaces quite materially: the reabsorption of new exudates is probably sometimes entirely impossible. Thus conditions may possibly be created in serous membranes, not unlike those of scrofulous tissues, and simple irritants, perhaps the fibrin, may induce in them a similar reaction.

IV.—QUESTION OF CONTAGIOUSNESS.—CLINICAL ASPECTS.

The idea of the contagiousness of tuberculosis is not new, and, like other unfounded views in medicine, it has oscillated, as all fashions will, from one extreme to another for many generations. At present it is entertained by a number of scientists and by a part of the profession. This view has called forth, from time to time, a number of researches whose results were either pro or contra. I shall refer to these subsequently.

Of late it appears that the belief in the contagiousness of tuberculosis has won considerable ground, not so much on account of accurate observation as on account of Koch's discovery of the bacillus tuberculosis.

Another element which seems to have had an influence in this direction is the fact that certain experimenters, formerly believing, from their own experiments, that tuberculosis was non-contagious, were led, later on, to change their opinions on account of the results of subsequent experiments. These later experiments will, however, be shown not to be conclusive.

Before discussing the merits of the bacillus question, I should like first to consider the question of contagiousness from clinical grounds; and should it be proved that tuberculosis is not contagious, then the necessity for a contagium surely falls to the ground.

According to the observations of the most prominent clinicians who have paid special attention to this matter, there is not on record a single authenticated case of tuberculosis as a result of contagium. Among scores of experienced men who deny thus the contagiousness of tuberculosis it is sufficient to mention the names of Virchow, Von Recklinghausen, Stricker, in Germany; Gull, William Watson, Paget, Humphrey, Richardson, in England; Bennet, in France; and Hiram Corson and Traill Green in our own midst,—all men of close observation, with ripe experiences extending over from thirty to fifty years.

The statistics of the large Brompton Hospital for consumptives, for thirty-six years, with regard to the resident officials, compiled by Dr. F. Williams (quoted from the *Lancet*, 1883), show that of four resident medical officers, one of whom had served twenty-five years, none had any lung-disease; of six matrons, none were consumptive; of one hundred and fifty resident clinical assistants, eight became consumptive and five died, but in only one was the disease developed during residence at the hospital. Since 1867, of one hundred and one nurses, only one died from phthisis, and that after leaving the hospital. Before 1867, six died, three of these of phthisis, but only one became so whilst resident, and she had a consumptive sister. She died thirteen years after first joining the hospital, but was not there the whole time. Of thirty-two gallery-maids since 1867, none developed phthisis while at the hospital. Of twenty house-porters, five died, but none of consumption. Non-residents:—Of nine secretaries, three were threatened with lung-disease, but recovered. Of twenty-two dispensers, seven died, three of phthisis, one while at the hospital. Of four chaplains, three died, none of phthisis. Of twenty-nine physicians and assistant physicians, eight died, none of phthisis. At the Chest Hospital, Victoria Park, there have been five resident medical officers during about the last fifteen years; all are alive and well. Two matrons, neither consumptive. There were two clinical assistants appointed every three months; none known to have developed the disease at the hospital. One nurse out of fifty or sixty in the last few years became consumptive while at the hospital, and she died after a year's illness.

An ingenious plan to decide the question of the communicability of phthisis was instituted by the British Medical Association by establishing the Collective Investigation Committee. This committee sent out questions relating to this subject to all the members of the Society. Of ten hundred and twenty-eight replies received, six hundred and seventy-three negatived the idea of a contagium, while two hundred and sixty-one replies favored it. According to these statistics, there is

a manifest majority in favor of the non-contagiousness of phthisis; yet such a plan is unsatisfactory, as the answers may be of unequal value, since their worth must be estimated in proportion to the experience and authority of the sender.

Not without interest is the observation of Prof. Corradi, of Pavia, who noted that out of one hundred and thirty-three families in which he had cases of consumptives, in only twenty-five of the families were there more than one member of the family ill of that affection.

There is no proof whatever that tuberculosis is conveyed from person to person by contagion. Seeming exceptions to this assertion can almost always be accounted for in some other way.

The assertion that the wife may contract the disease from the husband, I have pointed out, in a former paper, to be untenable; and I have also shown that a predisposition to scrofulosis may be acquired from the unwholesome mode of life led, of necessity, by such individuals.

Besides, it is established statistically that nearly one-third of all deaths occurring in middle life are due to phthisis. In view of the frequency with which this malady occurs, intermarriage between scrofulous individuals may be almost as common as between non-scrofulous ones.

The view taken that children become scrofulous by contagion from phthisical parents may be met by the fact that instances have occurred where a number of young children of phthisical parents were early removed from their homes and distributed among healthy families, and yet all, sooner or later, became phthisical.

Healthy persons have even been fed on bovine tuberculous material (which is considered identical with human tuberculous material) and have thriven on it, as is proved by the interesting feeding-experiments made upon man and recorded by Schottelius (*Virchow's Archiv*, No. 91, 1883). The circumstances which led to this experiment were as follows. In Würzburg the sale of meat affected by pearl-disease, or bovine tuberculosis, is permitted, but, as some opposition to its sale once arose, a community of country-people agreed to use exclusively tuberculous meat, on account of its cheapness and in order to prove that it was harmless. From October, 1867, to November, 1868, forty-nine tuberculous beeves, with well-pronounced lesions, were consumed by these people while they were under the supervision of the district physicians. In many instances the meat was even eaten raw, in consequence of habit. Ever since then, those people have continued the use of tuberculous meat, and thus far no bad results have been noticed: in fact, the record says that the people referred to are unusually healthy.

I wish to quote, however, some of the strongest affirmative evidence that exists in favor of the contagiousness of phthisis, in order to show upon what meagre clinical support this view is based.

The following case is related by Dr. C. Spriggs (one of the replies received by the English Collective Investigation Committee).

Miss R., aged 48, a dress-maker, living in rather a lonely cottage, had three apprentices, young girls of from 17 to 19 years, not related, from three adjoining villages, who took turns to remain in the house and sleep with her, each one week at a time. During their apprenticeship Miss R. was taken with phthisis, of which she died. In less than *two* years afterwards all these apprentices died of phthisis, although it is said that in the family history of each no trace of phthisis existed; and the parents, brothers, and sisters of two of them are alive and well at the present time.

Another interesting case is related by Mr. G. F. Black (English Collective Investigation Committee), in which a perfectly healthy child, with a family history free from all trace of tubercle, is reported as becoming infected by a phthisical nurse and having died with profuse hæmoptysis, after the disease had run a rapid course.

Lindemann (*Berlin. Klin. Woch.*, July 25, 1883) related two cases of tuberculosis said to have followed the rite of infantile circumcision. The operator was himself subject to tuberculosis, and both children became ill, and one of them died of tuberculosis.

Another instance is thus given (Dreschfeld, *Brit. Med. Jour.*, 1883): In a small town in Germany, where in the course of nine years only five children had died of acute tubercular meningitis, there happened in the course of nine months eleven deaths from that disease in infants all under six months. All these children were assisted into the world by a midwife who subsequently died of phthisis, and who had been in the habit, when attending a confinement, of breathing into the newborn child's lungs with the view of expanding them.

Lindemann (*Verhand. Innere Medizin, Zweiter Congress*, Wiesbaden, 1883) quotes the following:

A soldier at Strasburg was admitted into the hospital for rheumatism, and his bed was between that of two tuberculous patients. A

few months after his discharge from the hospital he began to cough. He returned to his family and was pronounced phthisical by the physician. Gradually the mother, brother, and father were affected by the disease. The father was attended by a neighbor, who was attacked and subsequently died, followed also by her husband.

Dr. Bela Cogshall, of Flint, Michigan, in a paper read before the American Public Health Association, 1882, quotes the following case after Dr. H. Weber:

A young man, with a well-established phthisical history, married four times, and lost all four wives of consumption. His first wife died after her third confinement; the second wife after a year of married life; the third wife after her second pregnancy; and the fourth wife after her first confinement. All four women are said to have come from healthy antecedents, and to have been "apparently" and "exceptionally" healthy prior to the time of marriage. Finally the much-married man died himself.

There is hardly any comment necessary. By the side of the arguments and facts advanced in this paper such and similar evidence is entirely unsatisfactory, on account of the complete absence of direct proof. On account of the isolated character of the cases and the frequency of occurrence of phthisis, there is just as much reason for inferring a coincidence as a contagium. Furthermore, there is no proof that a family history of scrofula or phthisis or some other causes had been fully eliminated in the cases referred to.*

On the other hand, daily observation and statistics show that there are thousands of instances which disprove the hypothesis of the contagiousness of phthisis. In multitudes of married couples where either the wives or the husbands died of phthisis, the surviving parties were known to have remained unaffected by the disease.

(To be concluded in next issue.)

* Since the reading and discussion of this paper, Dr. William H. Webb, of this city, has kindly sent me his monograph entitled "Is Phthisis Pulmonalis Contagious?" Philadelphia, 1878. It presents an admirable and full résumé of that part of the literature in which the so-called communicability of phthisis is favored. Dr. Webb ably advocates the view that phthisis is contagious. The most interesting passage to me in Dr. Webb's paper is a letter of Professor Alfred Stillé, who, from his clinical observation, extending over nearly fifty years, relates the following:

"I have never seen more than *one case* in which it *appeared* to me that the disease was directly communicated. This was a mother, between fifty and sixty, whose husband many years before had died of consumption. She was herself in excellent, *tough* health up to the date of her daughter's last illness, which was with chronic phthisis with cavities. A day before her death the daughter's breath was very offensive, and the mother, who was lifting her to change the pillows, inhaled it. She spoke to me of the foul taste and acrid sensation in her throat produced by the inhalation. Within a few weeks she began to cough, fell rapidly into consumption, and died after several months' illness. This is the only case of my own that appears to bear upon the affirmation of the question. On the other hand, *if pulmonary phthisis were often conveyed by contagion, the cases ought to be of daily occurrence, since the disease is the most frequent of all mortal diseases.*"

REPORT ON THE PROGRESS OF OTOLOGY.

BY CHARLES H. BURNETT, M.D.

PERFORATION IN THE MEMBRANA FLACCIDA, OR SHRAPNELL'S MEMBRANE.

THAT portion of the membrana tympani bounded below by the short process of the malleus and the folds of the drum-membrane, and above by the segment of Rivinus, at the inner and upper edge of that part of the tympanic bone forming the inner end of the upper wall of the external auditory canal, is known as the membrana flaccida, or the membrane of Shrapnell. It is composed of two layers only, an outer, or cutaneous layer, and an inner, or mucous layer; a fibrous layer like the middle layer of the membrana tympani below the folds is wanting in the flaccid portion, and hence one of its names. Its other name, Shrapnell's membrane, is derived from an English investigator, Henry Jones Shrapnell, who first minutely described it.

When a perforation is found in this part of the drum-head, it may be regarded as an indication that purulent disease has invaded the upper part of the tympanic cavity, in the neighborhood of the tegmen tympani and the joints of the ossicles of hearing, especially the great joint between the malleus and incus.

If this perforation be directly over the short process, it may be concluded that the pouch of Prussak has been opened; if anterior to this point, that the anterior portion of the drum-cavity has been especially involved; and if posterior to the short process of the malleus, that the region near the body of the incus, the antrum mastoideum, and even the mastoid cells themselves, may be implicated in the purulent process. These cases are nearly always attended with deafness, and, if the process in the tympanic cavity be still active, by a more or less copious discharge of an especially obstinate recurrence and fetid odor.

They present, therefore, even a grave consideration, since they indicate a purulent disease near the tegmen tympani,

and, as the latter is but a thin lamella of bone between the tympanic cavity and the brain, they lead quickly to the irresistible inference that the patient's life is in danger from an extension of inflammation to the brain, or from a brain-abscess.

There are often natural dehiscences in the tegmen tympani; and in such cases the mucous membrane of the drum-cavity and the membranes of the brain are in contact. Important as this aural affection is, very little about it is found in the text-books or in the periodical literature of otology, except that which has appeared within the last ten years in this country.*

This apparently has incited at least two observers† in Germany to report their observations on perforation of the membrana flaccida, and to communicate their ideas at the same time upon the pathology and treatment of this most important and not very rare disease.

One of the chief characteristics of a perforation in this part of the membrane is that air cannot be forced through it by any form of inflation. Morpurgo, in his article, tries to prove that air will pass through a perforation in the posterior part of this membrane when the tympanic cavity is inflated. But he apparently forgets that his experiment was performed on a healthy membrana flaccida artificially perforated, and not upon one already perforated by disease. In the latter case, it must still be maintained that the antecedent disease in the mucous membrane would so greatly swell the latter as to preclude the occurrence of a perforation-whistle, through the pathological perforation, by any form of inflation of the drum-cavity.

Again, this author maintains that the removal by irrigation of fetid, cheesy masses through a perforation in the membrana flaccida is a proof that the masses have come from the mastoid region. This cannot be accepted as a conclusive argument, because great masses may be removed from the diseased dome of the tympanic cavity underneath the tegmen tympani, as I have seen in two cases, without involvement of the mastoid cells.

In these cases the differential diagnosis between a morbid process limited to the upper part of the tympanic cavity, and a general one throughout the entire cavity, is aided by the appearance of the drum-membrane.

If in a case of chronic, copious otorrhœa, where a perforation in the membrana flaccida is found, the membrana tympani *in toto* is found to be swollen and red, and the malleus more or less obliterated from view, it may be concluded with considerable certainty that the inflammatory process is general throughout the cavity of the tympanum. In some instances the drum-membrane below the folds, *i.e.*, the drum-membrane proper, bulges as a whole, or at some point, and pressure upon it causes pus to ooze from the perforation in the membrana flaccida. The latter result is proof positive that matter has passed below the perforation, and has sought the lower parts of the tympanic cavity, or, as I believe, may have formed a pouch between the layers of the membrana tympani. If, on the other hand, the inflammatory changes are found only in the region of the perforated membrana flaccida, the rest of the membrana tympani remaining unaltered, that is, not greatly sunken, and with the manubrium of the malleus very prominent, and if no communication between the perforation and the tympanic cavity can be shown by inflation of air, it may be concluded that the process is localized very near the perforation in the upper part of the tympanic cavity.

If, however, the membrana tympani be retracted and possessed of limited mobility, and if there be no perforation-whistle, it may be fairly assumed that a wide-spread process has been present in the drum, but that it has run its course, leaving behind it more or less important changes, and is at last limited to the upper part of the drum-cavity.

In Hessler's article, based on an observation and report of ten cases, great stress is laid on the frequent occurrence of this form of ear-disease in children, and he reports two cases,—one in a child 4 years old, the other in a child of 6½ years,—the youngest cases yet reported. He believes that most cases of perforation in the membrana flaccida date from the earliest childhood. This is not an invariable rule, as I have now under observation a case of this form of ear-disease in a man 25 years old,

* J. Orne Green, Boston Med. and Surg. Journal, March 26, 1874; C. J. Blake, Amer. Otol. Soc., 1874; C. H. Burnett, 1877, Treatise on the Ear; H. G. Miller, Amer. Otol. Soc., 1878; A. H. Buck, Treatise on Diseases of the Ear, 1880; C. H. Burnett, Amer. Journal of Otology, 1881.

† Beitrag zur Pathologie und Therapie der Perforationen der Shrapnel'schen Membran, E. Morpurgo, of Trieste, Archiv f. Ohrenheilkunde, vol. xix. p. 264, 15th March, 1883, and a paper with the same title, by Hessler, Ibid., Bd. xx. p. 121, 8th August, 1883.

whose ear I examined ten years ago for another purpose, and at that time there was no perforation in the membrana flaccida, nor any symptoms of purulent disease in the drum-cavity. Hessler regards this form of aural disease as not uncommon, and gives as his experience that it is found in one per cent. of all cases of ear-disease treated. If this be a fact, it is strange that so few reports of cases are found in otological literature. Twelve years ago, Prof. Politzer, of Vienna, informed your reporter that he had seen only a few cases of this form of perforation of the drum-membrane. In his recently-published work on the ear he states that it is of comparatively rare occurrence, but that it does occur more frequently than was once supposed.

Hessler found that a communication existed between the Eustachian tube and the purulent nidus in the tympanic cavity in two cases, as was shown by the whistling of air through the perforation when air was blown into the drum-cavity through the Eustachian tube. Deafness is usually a prominent symptom of this form of ear-disease, but not always.

Treatment.—The first consideration in the treatment of this disease is that it cannot be intrusted to the patient, as nothing he can do through the external ear can reach the diseased spot behind the perforation, the latter being too small to admit drops instilled into the external canal. Furthermore, the diseased cavity behind the perforation is packed with purulent *débris*, which in every instance must be removed before drops or applications of any kind can be put into the cavity so as to medicate the diseased mucous surfaces.

At the head of the list of remedies in this malady stands boric acid,—most efficient in acute forms, but very valuable in the chronic conditions. The chief consideration in the use of any drug is the mode of its conveyance to the diseased cavity. The best method is undoubtedly by means of the tympanal syringe. Morpurgo holds that the best fluid for injecting is a saturated solution of boric acid. In those cases in which the odor is very bad, he resorts to a solution of carbolic acid. The long, slender nozzle of the syringe, filled with the solution to be applied, must be conveyed down the canal under good illumination of the parts by the forehead-mirror, and with the tip of the nozzle inserted into the perforation an injection may be made. This, of course, must be done at first with the gentlest pressure, or vertigo will ensue. Caustics are not to be used as injections. The best results have been obtained by Morpurgo from the use of disinfectant fluids, combined with the use of alcohol and water in equal parts, after the cavity has been cleansed by the disinfectant. The use of the latter alone may effect a cure. Combined with this treatment at the hands of the physician, the application of alcohol and water in equal parts, or even pure alcohol, to the ear, by instillation, may be carried out at home by the patient.

EPILEPSY CAUSED BY A FOREIGN BODY IN THE EAR.

Dr. Küpper,* of Elberfeld, in Germany, relates an interesting case, as follows. Maria B., 18 years old, came under observation in September, 1881. She stated that about six weeks previous she felt intense pain in her right ear, which had come on without any assignable reason, and had lasted several days, until copious suppuration ensued. About three weeks previous to her admission to the hospital, where she made these statements, she experienced a severe toothache after exposure to cold weather, and for the cure of the pain had, at the advice of a female friend, placed a piece of some kind of root in her ear to cure the pain in her tooth. She was, however, unable to extricate this substance from her ear, and had commenced from that time to show epileptic symptoms. Sometimes every day, and even several times in the same day, with intervals again of several days, she would fall with a scream upon the floor, lose her consciousness, and finally come to herself quite exhausted. Her mother stated that when her daughter was in these fits it required several people to hold her.

Examination of the case revealed that the watch was heard only on contact in the affected ear, bone-conduction was normal, and the external soft parts of the ear were neither red nor swollen. The parts in front of the external auditory canal were very sensitive to pressure, and the auditory canal was full of pus.

* Archiv f. Ohrenheilkunde, Bd. xx. p. 167, 12th December, 1883.

Syringing the ear was followed by vomiting and intense vertigo, so that the patient nearly fell from the chair. The auditory canal was occluded by polypi, which were very sensitive to the touch. Upon one occasion Dr. Küpper had an opportunity of observing the girl in one of these epileptic fits, and of satisfying himself of the insensibility of the pupils. The next morning the patient was etherized and the polypi extracted. Copious hemorrhage ensued, and treatment was suspended. That afternoon the patient had a severe fit, and, as the parts about the ear were very sensitive, three leeches were placed in front of the external meatus. A day or two later the clots of blood were removed by syringing, when in the fundus of the canal a black object was seen. Since syringing could not remove this, and as touching it produced great pain, the patient was again put under the influence of an anæsthetic. By means of a small hook this substance was removed, and it proved to be a piece of wood one centimetre long and one-half centimetre thick. After the removal of this foreign body and the polypi, there occurred two more fits, the first a few hours after the last operation, and the other, two days thereafter. The remnants of the polypi were cauterized with nitrate of silver, and the suppuration in the middle ear was treated by means of a solution of nitrate of silver, and by boric acid powder. In four weeks the patient was cured, the otorrhœa ceased, the perforation in the drum-membrane cicatrized, and the hearing ultimately became normal, as was determined by Dr. Küpper in March, 1883.

CEREBRAL IRRITATION FROM A MASS OF EPIDERMIS IMPACTED IN THE AUDITORY CANAL.

Dr. Küpper* reports in the same paper another case of neurotic irritation from aural lesion. It appears from this account that Miss S., 76 years old, was suddenly attacked in September, 1882, with symptoms of cerebral irritation, without any known cause. She suffered from intense headache and vertigo, vomiting, spasms of the facial muscles and in the muscles of the extremities, those of the trunk being but slightly implicated. Her temperature was normal, pulse 76. The patient complained especially of pain in her right ear, which was very sensitive to the least touch. Examination of the various organs of the decrepit woman revealed them to be in a healthy condition, except the right ear, which was entirely stopped up. The hearing in her left ear was nearly normal, but the right ear was absolutely deaf, and bone-conduction failed. It could not be found out how long the right ear had ceased to act normally. An attempt to remove the plug from the auditory canal by syringing produced vertigo, vomiting, and a severe spasm. Instruments could remove only shreds of the obstructing mass, and hence endeavors were instantly made to soften it. In the course of the same day and night there were frequent attacks of vertigo and spasm, and no nourishment could be retained, by reason of the tendency to vomit. The next morning careful syringing failed to remove anything more than small pieces of the obstructing mass. The latter appeared to cling firmly to the wall of the auditory canal at all points.

Gradually some flakes of the epithelial plug were removed by instruments, and the nervous phenomena diminished in intensity. The fits ceased entirely, and the vomiting became so much less as to permit the retention of food, and the vertigo vanished. The next day the entire obstructive mass was removed. The membrana tympani was found pressed inward against the inner wall of the drum-cavity; it was white and opaque, thick and lustreless. The mass removed from the ear was shining, and of a silver-gray color, and resembled in shape a cast of the external auditory canal. Especially well marked was the impression on its inner end of the form of the membrana tympani. The external auditory canal was considerably wider than the left, and the membrana tympani was adherent to the inner wall of the tympanic cavity. The hearing was destroyed. Examination of the plug removed from the auditory canal showed that it was laminated in structure on the outer surfaces, the laminæ being composed of epithelium without trabecular substance. There were no cholesterine crystals found. The central parts of the plug consisted of ordinary cerumen. The patient slowly regained the ability to walk about. No change occurred in the hearing or in the appearance of the drum-membrane.

* Op. cit., p. 169.

THREE CASES OF EMPYEMA, SHOWING THE ADVANTAGE OF INCISION AND DRAINAGE.

BY V. M. REICHARD, M.D.,

Fair Play, Maryland.

THE accompanying cases occurred in the practice of my friend and former preceptor, J. McPherson Scott, M.D., of Hagerstown, Maryland, by whose kind permission I am allowed to report them. The following abstracts are taken from his case-book:

Case I.—L. E., female, white, æt. 6 years, came under observation in May, 1880, suffering with pleurisy with effusion. Had been under the care of another physician, hence knew nothing of the earlier history. Put on quinine, iron, and cod-liver oil, with nourishing diet. In about a week began to have hectic fever, with rigors and sweats. Suspecting an empyema, passed the needle of a hypodermic syringe and drew away pus. Decided bulging of intercostal spaces, but no pointing. Next day passed a good-sized trocar between tenth and eleventh ribs posteriorly, and drew away about a pint of pus, somewhat to the relief of the child. Inserted a drainage-tube, but it became clogged, and had to take it out. The opening closed. In about a week was as bad as ever. After local anæsthesia, made an incision down into the pleural sac and let out about three pints of pus. The opening was kept patulous with a tent. The discharge continued in diminishing quantity for about two months, when it ceased entirely, and the opening was allowed to close. The child began to improve after the free incision, and now is stout and hearty.

Case II.—B. S., male, colored, æt. 20. In June, 1881, seized with pleurisy with effusion. In about a week began to have rigors and sweats. Passed hypodermic needle and drew away pus. Next day aspirated, and nearly a gallon of offensive pus withdrawn. In about ten days the chest had refilled. Aspirated again, but, owing to defective working of the apparatus, did not succeed well; only about a quart withdrawn. Rigors and sweats continued. In a short time the effusion was so great as seriously to impede respiration. The pleural sac was now freely laid open by incision between tenth and eleventh ribs. A large amount of pus came away. A discharge kept up constantly for several months, though in slightly-diminishing quantity. The case then passed from under observation for about six months. When seen again, the opening had closed; the boy was in the last stage of consumption, and died in a few days.

Case III.—J. W., male, white, æt. 35. In 1872 was called to see him. Was suffering with an empyema. Had had a pleurisy, and an empyema necessitatis formed. A surgeon had made an opening on lower and posterior aspect of thorax, but failed to get any pus; said it would come all right. Found him with greatly-impeded respiration and suffering very much. He declined any further operative interference. Having no aspirator at hand, took a piece of rubber tubing and fitted it to a barrel syringe. Passed the tubing down into the pus-cavity, and in this way drew away several pints of pus, affording great and instant relief. He was soon about again. Urged an operation, which he declined, saying he would "stick to the first apparatus." A discharge, never very profuse, was constantly kept up. When there was trouble in breathing, we resorted to the syringe and tubing. In 1880 he had a hemorrhage into the pus-cavity. Was relieved by passing catheter and washing it out. The washing would relieve the discharge, but not cure it. Tubercles now began to develop in the lungs. In the spring of 1881 had another hemorrhage into the sac. In December, 1881, died of phthisis pulmonalis.

These cases present some points for study. They show that the best chance for recovery is after free incision. Whether the case be one of suppurative pleurisy or one in which a serous effusion has become purulent, the indication is the same,—free incision. The pleural sac is simply a pus-cavity, and must be treated as such. In Case I. improvement began as soon as free drainage was established. The child is now robust, with very little retraction of the chest-wall. In Case II. aspiration was given a fair chance, but failed entirely. It is a fact observed by all who have had much experience with negroes that thoracic diseases are badly borne by them. Under the continued drain, tubercles developed, and he died with acute consumption, although the empyema was almost cured.

Case III. is another against aspiration. Though the pleural sac was often emptied and washed out, drainage was never fairly established, and at last the system succumbed to the purulent secretion,—only, however, after the lapse of nine years. Had an incision been made through the chest-wall, and this pus-cavity been treated as one in any other part of the body, the result might have been different.

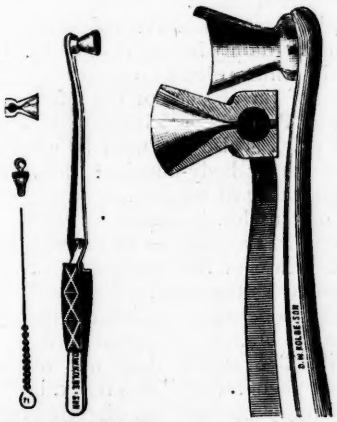
It is of the first importance that the incision be made into the lowest part of the sac. In some subjects it is not an easy matter to find the lowest ribs. In such cases a good plan would be to aspirate with the hypodermic syringe. Even if the needle were passed below the diaphragm, no harm would result.

AN INSTRUMENT FOR PLACING SHOT UPON WIRE SUTURES.

BY THOMAS S. K. MORTON, M.D.

HAVING noticed the frequent annoyance, inconvenience, and delay of operators in using the shotted-wire suture from the shot slipping from either their fingers or those of an assistant, and the difficulty of getting the ends of the wire through the perforation, or, after coaxing the wires into it, of finding this perforation incomplete, to obviate these difficulties I have devised the instrument which is shown in the accompanying wood-cuts, and which my father and others have been using of late with much satisfaction.

It consists of a hollow metal cone, one-half inch diameter at base, and one-half inch in height, having at its apex a perforation (sufficiently large to admit two strands of any wire likely to be used) which opens into a chamber the exact size of the shot intended for use. Directly opposite this entering opening is another, slightly conical, communicating with the exterior, the apex being its outer termination. The whole is split into two symmetrical halves, and each mounted obliquely to its axis and vertical to its section on one arm of a pair of crossing forceps.



Instrument and loading-pin. (One-fourth actual size.)

Actual size. (Open.)

Then, having a number of shot, which must be bored and punched to secure uniformity, strung on the pin provided for the purpose (see cut), the arms of the forceps are opened, a shot is placed in one of the separated halves of the shot-chamber, and the forceps allowed to close, thus embracing the shot and pin, which latter is now drawn out and the instrument is ready to be presented to the ends of the wire, which pass along the cone, through the shot, and out behind.

When the arms are again separated, the shot is upon the wires, ready to be run down and compressed; an assistant in the mean time places another shot in the chamber, ready for the next stitch.

Chief among the advantages of this instrument may be mentioned: the shot require no handling, and after loading cannot be dropped or mislaid, and, being bored, must be pervious; also shot with a finer perforation can be used, and thus a small shot be equal in strength to a much larger one as now used: the wires do not require to be twisted and cut, and if the ends presented to the cone are not more than one-half inch apart, they are bound to pass through the shot; the fingers do not obstruct the view, and if a known number of shot be upon the pin at the beginning of the operation, the number of sutures put in can be ascertained by the number missing.

TRANSLATIONS.

A CASE OF GASTRIC FISTULA WITH DIGESTIVE EXPERIMENTS.—Dr. De Cerenville reports (*Revue Médicale de la Suisse Romande*, January 15) a case of gastric fistula, and Prof. Herzen communicates in the same article some physiological observations made upon the patient. A vine-dresser, 28 years of age, of intemperate habits, and a confirmed dyspeptic, was found to be suffering from fibrous thickening and contraction of the cardiac orifice of the stomach, with dilatation of the œsophagus. As the stricture appeared impassable, it was decided to perform gastrostomy. The incision was made parallel with the costal cartilages on the left side, and was about five centimetres in length. The muscles and aponeuroses having been cut through, the peritoneum was then incised, and the adjacent wall of the stomach was fastened to the edges of the wound by a circle of sutures of catgut and of metal, passing through the stomach, peritoneum, and integuments, and the wound was covered by a Lister dressing. The patient was nourished by enemata contain-

ing raw meat and pepsin, and did very well after the operation. On the second day, the portion of the stomach comprised between the ligatures was incised without difficulty, and without pain or notable hemorrhage. Into the stomach a tube was inserted, and a quarter of a pint of broth was introduced; in the evening half a pint was given. Subsequently he was fed regularly with milk and broth, and cure was rapid; the sutures were removed on the eighth day, when the adhesion seemed perfect and sufficiently solid. It was found that a tube (such as is used for dogs) could not be used, as part of the gastric juice escaped by the side of the canula and caused excoriations, due to digestive action upon the skin. The best method of closing the wound was a tampon of wadding, covered by a concave plate, and held in position by a girdle. All efforts at dilatation of the cardiac orifice failed.

In the course of his investigations, Prof. Herzen discovered some interesting facts. Each morning, after fasting for twelve to fourteen hours, it was found that the stomach contained from two hundred to three hundred centimetres of an acid liquid, evidently stained with bile. This had a feeble digestive power. On two occasions experiments showed that it contained no pepsin. After this fluid was removed from the stomach, another liquid took its place, a liquid absolutely colorless, limpid, extremely thick, ropy, something like the white of an egg. In quantity it was less than the preceding, but its digestive action upon albuminoids was much more active, although still not so much as the normal gastric juice poured out during digestion. Remnants of food were detected in the stomach after a slight repast for at least six hours, but they completely disappeared in twelve hours. It was noticed that hunger began some time before the stomach was entirely empty of food. It was remarked with regard to the first (or bile-stained) fluid found in the stomach, that it disappeared into the duodenum very shortly after applying any irritant to the fistule, but that if the bandage were allowed to remain undisturbed the fluid would remain indefinitely. The fact that the gastric juice in the morning is deficient in pepsin should lead to some correction of diet: for instance, hard-boiled eggs eaten by themselves were found to give indigestion, but by using with them a peptogenic fluid, such as a solution of dextrine or a cup of broth, the discomfort was avoided.

THE MODE OF PRODUCTION OF THE TENDON REFLEX.—Jendrassik has made a number of experimental studies of the various conditions which are necessary for the presence or absence of tendon reflexes, particularly for the patellar reflex. The following conclusions express the most important of his results:

1st. The "knee phenomenon" is a true reflex action, brought about by the mechanical irritation of the nerves situated in the patellar tendon. It is not necessary that the stimulus should be applied at the junction of muscle and tendon: stimulation of the part of the tendon lying farthest from the muscle is equally efficacious.

2d. For the production of the reflex muscular contraction it is necessary that the muscle be passively extended: to a certain degree the contraction of the muscle is proportional to the stretching to which it is subjected.

3d. Voluntary innervation of the crural nerve diminishes the patellar reflex, or may prevent its appearance altogether. Contraction of the muscles innervated by the sciatic nerve, however, instead of preventing rather favors the development of the patellar reflex.

4th. The path of the reflexes lies in the spinal cord only in the gray matter. Lesion of the white columns cannot directly be a cause of the absence of the reflex.

5th. Physiological increase of the tendon reflex is also produced by contraction of the other body-muscles: thus, simultaneous lifting of weights, or strong stretching of muscles, increases the reflex.

6th. In the majority of cases pathological increase of the patellar reflex may be regarded as the result of an interruption of the conduction of inhibitory impulses from the brain to the spinal cord.

7th. The author does not regard the "foot phenomenon" as a reflex, but rather as a tonic contraction, directly produced through the mechanical stimulus given in the sudden stretching of the soleus: the irritability of the muscle must therefore be increased.

In five instances severe stretching of the crural nerve in rabbits left the patellar reflex unaltered.—*Centralb. für die Med. Wissen.*, No. 49, 1883. S.

PHILADELPHIA

MEDICAL TIMES.

PHILADELPHIA, FEBRUARY 23, 1884.

EDITORIAL.

NEW YORK STATE MEDICAL SOCIETIES.

THE County Societies of New York State have been requested to send delegates to form a New State Medical Society in New York in November next. The establishment of a second New York State Medical Society seems an actual necessity, from the persistent spirit of opposition to the American Medical Association shown by the leaders of the dominant faction in the old State society, which deliberately forfeited its right to representation in the National Association. From remarks made during the discussion of the subject, it would almost seem that the object of the great revolt, after all, was not so much to get rid of the old Code of Ethics as it was to "shake off the shackles" of the national organization, as it was elegantly and forcibly expressed by a prominent ear specialist of New York, who declared his belief that other State Medical Societies would soon be found to follow the example. We are at a loss to understand why the yoke of the American Medical Association should suddenly have become so galling. As an "annual picnic" and a "junketing association," a representative body without corporate existence, and deriving its authority solely from the delegates in attendance at the meetings once a year, it certainly could not greatly interfere with New York physicians. Is their course to be explained on the theory that they had decided upon doing what they knew could not be approved by their medical brethren throughout the country, and they therefore attempted to escape censure by breaking their part of the contract made upon entering the national organization, and dishonoring their pledges to support its laws?

PHYSICIANS' ACCOUNTS.

PHYSICIANS generally are not credited with being very good business men, and in case of death their heirs often suffer loss on account of the difficulty experienced by the executors in deciphering their books. It sometimes happens that the physician is so busy with his engagements that he postpones his clerical work and neglects entering his charges for weeks at a time, keeping his memoranda upon loose slips of paper which are easily lost or mislaid. No better illustration could be given of the truth that delays are dangerous. With regard to the manner in which his books should be kept in order to make them books of original entry which may be introduced as evidence in court to defend a claim, an important decision has just been rendered. Judge Ashman, of the Orphans' Court (December term), in giving an opinion upon a medical account, declared that "if the books are so kept as to cover a daily entry of each visit, with the name of each patient, a list of the medicines furnished, and the price which custom has fixed for the particular service, such a record will comprise all the incidents of certainty of time, person, labor, and value, and each entry will be complete in itself." He also declared that the ordinary diary or visiting list, in which the records are kept with signs or hieroglyphics, instead of amounts, "could serve at best only as memoranda from which to make more formal charges;" such accounts could not serve as original entries in order to prove services rendered, in a court of law.

It is also well to remind physicians that, in making out accounts, a visit *per se* cannot be considered as a proper ground for a charge: the account should be made

out for services rendered at the request of the patient or of the person responsible for the account.

RESULTS OF RESECTION OF THE KNEE-JOINT AS AFFECTED BY AFTER-TREATMENT.

IN scarcely any department of surgery are the advantages of modern methods more evident than in the operations upon joints. Dr. J. Mensing has recently published * an analysis of ninety-two cases of resection of the knee-joint performed between the years 1857 and 1883 in the clinic at Kiel, dividing the cases, for the sake of comparison, into three classes. In the first class fall all the cases operated on before the introduction of Lister's method of dressing and Esmarch's bandage; in the second group are the cases treated by these methods; and in the third class are the cases in which Neuber's permanent dressing was used in the after-treatment.

Regarding the cases, first, as a whole, there were eighty total and three partial resections for chronic fungoid inflammation of the knee-joint, and nine cases of wedge-shaped excisions to overcome deformity resulting from this disease. In fifty-one cases the joint-affection originated in the synovia, in sixteen cases in the bone, and extended to the joint; in the remainder of the cases no note is made in reference to this point.

Forty-eight of the operations (52.1 per cent.) resulted in cure; of these the operation was performed for primary synovial gonitis in thirty-three, for primary osteal gonitis in six, and for anchylosis in seven. The subsequent histories of thirty-two of these cases were followed up, with the result that in most of the cases the leg remained extended and useful, while in three cases moderately marked flexion occurred; in two cases the disease returned, in one to be treated by a second successful resection, and in the other by amputation.

Of thirty-four cases, twenty left the hospital while a fistula remained, and secondary amputation had to be performed in fourteen. Of those leaving before the cure of the fistula, it was subsequently learned that in ten perfect healing resulted, and in two cases death, in one case from amputation of the thigh, and in the other from secondary resection, while still another case at the time of the report was suffering from albuminuria. Of the fourteen instances in which secondary amputation was performed in the hospital, twelve were completely successful, one died from septicæmia, and one left the hospital with a fistula and died from phthisis six months later.

Of the ten cases in which death resulted directly from the resection, five were from pyæmia, one from Bright's disease, one from miliary tubercle, two from exhaustion, and one (a bleeder) from uncontrollable hemorrhage.

The comparison of the results obtained in the three different periods before alluded to is very instructive:

Period.	Number of cases.	Cured.	Not Cured.	Died.
I.....	21	5 = 23.8%	9 = 42.9%	7 = 33.3%
II.....	23	7 = 30.4%	14 = 60.9%	2 = 8.7%
III.....	48	36 = 75. %	11 = 23. %	1 = 2. %

The solitary case of death in the third period was that of a bleeder, who died from hemorrhage six days after the resection and two days after the secondary amputation of the thigh.

Another very great advantage of the permanent dressing is that it reduces the duration of treatment from one hundred and twenty-nine days, the average in the first two periods, to eighty-nine days.

* Centralb. für Chirurgie, December 8, 1883.

THE ETIOLOGY OF PHTHISIS.—The fact of the question as to the pathological relations of phthisis and bacilli occupying so

great a share of scientific attention at the present time must be our excuse for devoting so much space to this subject in the present issue. The next number will show the usual variety of topics.

NOTES FROM SPECIAL CORRESPONDENTS.

SIAM.

MR. EDITOR,—The following notes of native practice of medicine are thought to be of sufficient interest to warrant publication.

A NOVEL EMETIC.

Not very long ago, a young Siamese lady, wishing to put an end to her existence, swallowed a large quantity of opium. Mustard, warm water, and various emetics were tried, without avail. Finally the old Siamese doctor procured an eel, clipped off the end of his tail to make him squirm in a lively manner, then poked the slimy fellow, tail first, down the dusky maiden's œsophagus. Emesis was produced immediately, and the rash one's life was saved by an eel.

A NEW REMEDY FOR SNAKE-BITE.

Several months ago, a Siamese man was bitten on the toe by a small snake which the natives regard as a deadly variety. A common barnyard fowl was quickly found, and the injured toe was inserted in the cloaca without delay. The poison was rapidly absorbed by this intestinal pouch, and the hen died, apparently from the effects of the same, in a few minutes, while the man did not suffer at all from the effects of the bite. This seems to me to be worthy of further experiment.

A NEW REMEDY FOR ASTHMA.

One sultry day during the rainy season, an asthmatic old man came panting up my steps, breathing with the greatest difficulty. He rested a few moments, and then asked, in the gravest manner possible, if I had any tigress's milk. He seemed much disappointed when answered in the negative. His Siamese doctor had assured him that this article would prove an infallible remedy in his case. He refused other medicine, and went sorrowfully away.

SIAMESE REMEDY FOR RINGWORM.

I have just noticed Tong-Pang-Chang, an Indian remedy for ringworm, advertised in one of the London papers. Tong-Pang-Chang is a Siamese name, meaning a thousand catties of gold. The preparation advertised is a tincture made from the roots of the *Rhinacanthus communis*. This plant grows here like a weed. By taking the fresh roots and bruising them well, and allowing them to remain in alcohol forty-eight hours and filtering, we obtain a beautiful claret-colored tincture. This remedy I have used in hundreds of cases, always with the best results.

E. A. STURGE,
Medical Missionary.

PETCHABURI, SIAM, December 6, 1883.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, JANUARY 24, 1884.

The Vice-President, Dr. E. O. SHAKESPEARE, in the chair.

General tuberculosis of serous membranes. Exhibited by Dr. W. E. HUGHES.

CAROLINE K., white, æt. 17, was admitted to the University Hospital November 3, 1882. There was a history of articular rheumatism in father and mother. The family was free from consumption. She herself had been perfectly well till eight months previous, when she developed symptoms of acute pleurisy. The acute symptoms subsided after a few days, and, with the exception of slight dyspnœa and hacking cough, she soon felt as well as before. Two months afterwards she had pain, swelling, and redness, involving successively all the large joints of the body, lasting ten weeks, and disappearing completely. From the outset of the articular affection her strength and flesh failed steadily, appetite grew poor, and digestion defective. Both dyspnœa and cough increased slightly. Five weeks before admission she began to have occasional sharp pains through the abdomen, and noticed that the abdomen was gradually enlarging. When first examined, she was pale, somewhat emaciated, and had hacking cough with mucous expectoration, slight, constant dyspnœa, very little increased on exertion. The right pleural cavity was filled with fluid up to the third rib; the abdomen much distended with fluid, free to move. The heart was normal in size, but there was a strong mitral systolic murmur. She had an irregular hectic fever. Under treatment the pleural effusion rapidly subsided, but that of the abdomen less rapidly. One month after admission, symptoms of meningitis developed, and examination of the eye-ground showed descending neuritis. A week afterwards, a double pericardial friction-sound developed over the sternum opposite the third intercostal space. She died December 16.

Autopsy, seven hours after death.—Thorax,—right pleural cavity completely obliterated by organized plastic adhesions. In the ad-

hesions numerous gray miliary tubercles were found. Right lung congested, compressed, and contained scattered miliary tubercles. Left lung contained a few miliary tubercles; pleura normal. Heart normal in size. Marked thickening of mitral leaflets, with incompetency. In the pericardium, at upper part of anterior surface of left auricle and over base of aorta, were a few small grayish granulations, apparently tubercular. Peritoneal cavity contained about two quarts of straw-colored serum. Peritoneum everywhere thickly studded with gray miliary tubercles. Old peritoneal adhesions in several parts of abdomen, notably in left lumbar region and around pancreas. These old adhesions were filled with miliary tubercles. Lymphatic glands moderately enlarged, not cheesy. Numerous gray miliary tubercles in membranes of base of brain, especially in Sylvian fissure. No tubercles in any organs except the lungs.

Tubercular ulcers of intestines, with perforation. Exhibited by Dr. W. E. HUGHES.

William T., white, æt. 30, was admitted to the University Hospital April 16, 1883. His mother and a sister died of phthisis. He always took cold easily, and was never strong. Two years ago, after lifting a heavy weight, he had several slight pulmonary hemorrhages. At that time he had no cough. Four months before admission he took a heavy cold. From that time up to his admission he had a dry, hacking cough, with mucous expectoration, some dyspnœa, pleuritic pains on the right side, and a few small hemorrhages. He lost twenty pounds. On admission, there was in the lower part of the right pleural cavity an effusion localized in the posterior half. Over the right lung the respiration was somewhat roughened, with an occasional bronchitic rhonchus. The left lung was normal. Under treatment the effusion subsided, but consolidation commenced at the apex of the right lung. The consolidation went on to breaking down, and the same process commenced at the left apex. He gradually failed, with the usual phthisical history. One month before death uncontrollable diarrhœa developed, with severe colicky pains and intense tenderness throughout the abdomen. He died December 26, of gradually increasing asthenia.

Autopsy, three hours after death.—Great emaciation. The right pleural cavity was completely obliterated by firm old adhesions. In the left there were some adhesions at the apex; no fluid. The right lung had numerous small cavities in the apex. The lower two lobes were riddled with miliary tubercles and small cheesy masses. The left lung was, at the apex, indurated with tubercular and cheesy deposits. In all other parts it was healthy. Bronchial glands were enlarged. The heart weighed four and one-half ounces. The aorta was slightly atheromatous. The liver weighed two and one-half pounds, and was somewhat nutmeg-like in appearance. The spleen weighed two and two-thirds ounces. The kidneys were normal in size and appearance. The intestines were everywhere adherent to each other and to the abdominal wall, and scattered through the adhesions and over the peritoneum were a few miliary tubercles. The small intestine contained tubercular ulcers strung along its length from the lower part of the duodenum to the ileo-cæcal valve. They were about as numerous in the upper part of the intestine as in the lower. Several of these ulcers had perforated the peritoneal coat; but the contents of the intestines were prevented from exuding into the abdominal cavity by adhesions which had formed around the perforations to the neighboring peritoneal surfaces. There were a few tubercular ulcers in the colon. The mesenteric glands were enormously enlarged.

Phthisis following empyema; amyloid kidneys; cancer of uterus. Exhibited by Dr. W. E. HUGHES.

Amanda F., white, æt. 38, was admitted to the University Hospital for cancer of the uterus. She had been a serving-woman, and had been much exposed to draughts. Her mother died of cancer of the uterus. There was no phthisical family history. One of her children died of tubercular meningitis. While in the hospital she complained of pulmonary symptoms, and physical examination of her lungs showed on the left, posteriorly, flatness down to midway between the spine and the angle of the scapula, with blowing breathing and gurgling râles; anteriorly, tympany, with metallic, cavernous breathing; at the base a small amount of fluid free to move. On the right, hyper-resonance, with exaggerated breathing, and at the apex moist râles. Her general condition was much below par. She had a troublesome loose cough, with free muco-purulent expectoration, and pleuritic pains through both sides of her chest. Five and a half years before, she had taken a severe cold, from which she dated all her trouble. With the cold there had been severe pleuritic pain in the left side, some dyspnœa, and slight muco-purulent expectoration, occasionally streaked with blood. In a month she had lost twenty pounds. Afterwards the acute symptoms disappeared, the pain grew less severe, the cough looser, and the expectoration quite profuse. She slowly lost ground till about a year before, when, after a succession of heavy colds, her condition deteriorated more rapidly. There was more dyspnœa, more cough, and an occasional rise of temperature preceded by chilliness. During this year she had several pulmonary hemorrhages. For a month the frequency of micturition had been much increased, but the urine contained no albumen, though the quantity was increased and the specific gravity

somewhat lowered. The first symptoms of cancer of the uterus had appeared about seven months before. For more than a month after admission she improved; then, a day after a rather profuse pulmonary hemorrhage, she developed a typical uræmic condition. The urine was very scanty and loaded with albumen, but contained neither tube-casts nor blood. The uræmic condition disappeared after two days, and the urine increased to its former quantity, all but a trace of the albumen disappearing. Two weeks after this, for the first time, a few waxy and epithelial casts were found in the urine. From this time on, the quantity of urine passed daily varied from fifty to seventy ounces; its specific gravity ranged between 1008 and 1015, and the quantity of albumen contained steadily increased, till, towards the end, it became as much as one-third of the bulk of the urine. At no time were very many tube-casts present, though they were never absent; they were either waxy or epithelial. She died January 1, 1884, of uræmia, which had gradually developed.

Autopsy, five hours after death.—Much emaciation. The left lung was compressed, atrophied, and firmly bound down in the posterior part of the pleural cavity. The remainder of the cavity contained gas and about eight ounces of sero-pus. The pleura was much thickened, and transformed into a pyogenic membrane. The lung itself was hollowed out into a large cavity, with suppurating walls, by an extensive series of bronchial dilatations, with more or less destruction of lung-tissue. The lung was so torn in its removal that it was impossible to say whether or not there had been a communication between it and the pleural cavity. The right lung was emphysematous, and contained some tubercular and cheesy deposits at the apex. The heart weighed nine ounces; its right cavities contained an unusually-developed ante-mortem clot, closely moulded to the pulmonary valve. The kidneys weighed eleven and a half ounces, and presented very characteristic amyloid change. The body of the uterus was unchanged, but its cervix and the upper part of the vagina were destroyed by cancerous ulceration. There was no infiltration of the lymphatic glands. Other organs normal.

Secondary tuberculosis of the bladder, ureter, kidney, and supra-renal body. Exhibited by Dr. W. E. HUGHES.

Ida G., white, æt. 19, had suffered with the usual symptoms of phthisis for about nine months before she came under observation. Her father and a sister had died of phthisis, and she had always taken cold on the slightest exposure. When first seen, she was standing leaning over the back of a chair, suffering the most agonizing pain in the region of the bladder. Desire to urinate was constant and irresistible, and the passage of the small quantity of urine gave rise to such suffering that she would shriek and almost faint. Till two weeks previous there had been no trouble with the urine; then the pain began, slight at first, and became gradually more and more severe. She had passed frequently masses of clotted blood, with great suffering. Under anodynes the pain became less, and an examination of the bladder showed it to be much contracted, with roughened walls. Examination also brought on a slight hemorrhage. The urine contained nothing abnormal except blood and pus. Under the continued use of anodynes the pain decreased and finally disappeared. After the cessation of pain, the blood disappeared from the urine, but was replaced about two months afterwards by a small quantity of albumen and a few granular tube-casts. About this time œdema began in the ankles and gradually involved the whole of the lower extremities. The tissues finally became so distended that her legs were utterly useless. The urine never contained more than one-tenth of its bulk of albumen, and the tube-casts were always few in number. She died of asthenia four months after coming under observation.

Autopsy, fourteen hours after death.—Extensive degeneration of lungs. Liver was extremely fatty, being of a uniformly yellow color, with no distinction whatever between its lobules. The bladder was small and firmly contracted, its walls thickened, its inner surface roughened, rugose, papillomatous, its mucous membrane thickly studded with tubercle granulations. The substance of the right kidney contained numerous gray miliary tubercles; its pelvis was dilated and presented the same appearance as the inner surface of the bladder. The corresponding ureter was as thick as an index finger; its walls firm, hard, infiltrated with tubercular deposit; its mucous membrane in the same condition as that of the pelvis of the kidney. The right supra-renal body retained none of its original structure: it was a mass of cheesy tubercles, firmly adherent to the kidney. The left kidney, as well as the other organs, was normal.

DISCUSSION.

Dr. FORMAD had examined these specimens for bacilli. None were found in the first case, although the post-mortem was made within about two hours after death and frozen sections at once cut. The lymph-glands were also examined, as well as the lungs, without detecting any bacilli. In Dr. Hughes's second case the lymph-glands as well as the perivascular spaces were crowded with colonies of bacilli. In the first case was an absolutely primary tuberculosis of the serous membranes, with no bacilli, while in the second ulceration was present with lymph-gland

bacilli, as well as invasion of other tissues. This would indicate that bacilli and general tuberculosis most commonly result from surface-troubles, *i.e.*, the mucous membrane of the lungs, intestines, etc., when affected by tuberculosis. In the case of tuberculosis of the serous membranes there was no history of a strumous diathesis, and no general tuberculosis ensued. From a careful study of ten similar cases Dr. Formad was inclined to think that serous tuberculosis was the only form of the disease to which *non-strumous* individuals were liable.

Dr. SHAKESPEARE said that he had been struck with the fact that the third case, with a family history of carcinoma, apparently developed tuberculosis after empyema, and that at the post-mortem carcinoma of the uterus was found. An antagonism between these two diseases has been long believed in, but of late has been questioned, since a careful scrutiny of statistics has shown them to be more commonly associated than is generally believed. Dr. Shakespeare then called attention to the fact that in most cases a family history was obtained running back for only one generation, yet, there being no statement as to the degree to which the investigations had been carried, statistics drawn from such sources must be unreliable, as Dr. Formad, among others, has called attention to the fact that tuberculosis can and often does skip one generation. There were some points in the history of the case of tuberculosis of the serous membranes which suggested that the primary trouble might have arisen in the joints, which are closely analogous to serous sacs, if they are not actually such.

Dr. HUGHES said that in the case of the patient where he had stated that the family history was good, he had gone back for three generations directly and collaterally.

Dr. MUSSER asked what was the effect of repeated tappings on the development of tubercle, as some clinical teachers are now advising against such operations in simple pleurisies, advocating in preference other remedies to induce rapid absorption of the effusion.

Dr. J. C. WILSON thought that this question could only be answered by an analysis of a large number of cases specially examined for this purpose.

Dr. SHAKESPEARE, having been informed by Dr. Hughes that the so-called tubercles in the case of carcinoma had not been examined microscopically, suggested the reference of this specimen to the Committee on Morbid Growths, since it might really be only a case of miliary carcinosis, and not tubercle. With reference to the influence of tapping on the development of tubercle, experience showed that it most frequently developed where no tapping had been performed, but where rapid resorption had taken place. Pathological experiment has shown with what ease any innocuous substance, even simple traumatisms, will set up tuberculosis of the serous membranes. If, then, a general tuberculosis can result from tubercle of serous membranes,—a point not settled as yet by experimenters,—repeated tappings, with, perhaps, the coincident introduction of deleterious substances, might account for the alleged fact mentioned by Dr. Musser.

Tumor of the anterior mediastinum, with secondary deposits in the heart and lungs. Presented by Dr. J. C. WILSON.

The specimens were removed from the body of an unmarried woman, aged 60 years, who died in the hospital of Jefferson Medical College January 7, 1884. The patient had been singularly free from sickness until about eighteen months before coming to the hospital, three weeks prior to her death. The earliest symptoms were fixed pains of varying intensity in the sternal region, with attacks of palpitation and dyspnœa. These symptoms increased in severity and were aggravated by exertion. After a time she began to experience difficulty in swallowing. Six weeks before admission to the hospital her feet and legs were for the first time observed to be swollen. The dropsy soon became general. She had no knowledge of her family history.

On admission, she suffered from constant dyspnœa, paroxysmal, often urgent, worse at night; inability to lie down; occasional unproductive cough; a sense of weight and oppression in the chest, and particularly in the precardial region; pain under the sternum, and great discomfort in swallowing. There was a high degree of general anasarca and the evidences of pleural and peritoneal effusion. The surface was cool, the skin bluish. The examination of the chest was rendered difficult by the unusual thickness of the tissues, the patient being not only enormously dropsical, but also very fat, and the breasts being hugely developed. It was nevertheless noted that the impulse of the heart was feebly felt, the apex beating in the sixth interspace and somewhat to the left of its usual position; that a faint systolic blowing murmur was heard at the apex, feebly propagated towards the left; that the heart-sounds at the base were unusually obscure, and that the pulse was feeble, frequent, and irregular. There was flatness with absent respiratory murmur at the base of the chest on both sides, and harsh broncho-vesicular respiration over the upper regions of the chest.

In the upper sternal region the cutaneous venous twigs were conspicuous, without rising, as is sometimes seen, above the level of the skin. They were dilated and tortuous, and symmetrically arranged beyond the sternal borders, at which they abruptly ceased.

The thyroid body was enlarged and formed an egg-like projection in the median line. It

was exceeding hard, but not sensitive or the seat of pain. The patient regarded it with indifference, and said that *the lump* had existed for "many years."

I was unfortunately prevented from being present at the autopsy, and this tumor was not removed.

The boundaries of dulness in the pericardium could not be distinctly made out. It was, however, noted that the distribution of pressure-signs absolutely negatived the existence of aneurism of the aortic arch as their cause. The pupils were equal in size and in response to light, the voice was unchanged, the radial pulses equally feeble.

The patient died suddenly in an attack of dyspnœa at 9 P.M. on the 7th of January.

Necropsy.—Body much swollen and œdematous; face and thorax very blue. Both the pleural sacs and the peritoneal cavity contained fluid in large amounts. Strong pleural adhesions on left side. The anterior mediastinum in its upper segment was occupied by a large firm mass, mammillated in structure, extending from the notch of the sternum downwards five inches, and adherent to that bone and the costal cartilages. The width was about three inches, and its depth in an antero-posterior direction about the same. It occupied exactly the position of the thymus gland. Its visceral surface was embossed, but smooth; in its upper portion only adherent to the great vessels. No adhesions existed between the parietal pericardium covering its posterior surface and the visceral layer of the pericardium.

NEW YORK ACADEMY OF MEDICINE.

A STATED meeting was held February 7, 1884, FORDYCE BARKER, M.D., LL.D., President, in the chair.

THE PREVENTION AND TREATMENT OF PUERPERAL FEVER.

(Adjourned discussion of Dr. Thomas's paper on this subject, read before the Academy December 6, 1883.)

According to previous announcement, the discussion was opened by the President, who, on account of difficulty of voice, requested Dr. G. Griswold to read his paper for him. In his opening remarks the President said, "During the five years which I have had the honor to occupy this chair I have never before seen a meeting of this Academy so enthralled by the charm of elocution, the fascination of rhetoric, the glow of conviction, and the air of one who speaks by authority—an air which can never carry weight unless it has been before fairly and justly earned by good work—as on the evening of December 6, when the paper was read on 'The Prevention and Treatment of Puerperal Fever.' Its authoritative tone, its earnestness and sincerity, its coloring of being based on experience and observation, instead of being unconsciously deduced from preconceived theory, give the paper such a plausible air of scientific truth as must secure its acceptance without question by many minds whose belief rests on authority without examination of the data or analysis of argument." The President thought it a duty to examine novelties of doctrine and practice brought before the Academy and subject them to the tests of advanced science of the day and the accumulated experience of the past. Again, in view of some past controversy, aside from the scientific aims of the Academy, it seemed to him important that the general profession should know that in this hall there could be the strongest antagonism in views relating to science, the keenest encounters in intellectual gladiatorship, carried on with all the courtesy of the duello, without individual hostility or the interruption of personal friendship.

Dr. Barker thought all would agree that the paper read by Dr. Thomas was remarkable for originality, in that some of its pathological doctrines and practice taught were not to be found in any work on obstetrics or taught by any writer of acknowledged repute. He would give, in as concise language as was consistent with clearness, his reasons for believing that the whole tone and coloring of the paper were misleading and dangerous because supersaturated with septic infection. He believed, however, that puerperal septicæmia was one of the most dangerous incidents which might occur to the puerperal woman; and ten years ago he delivered a lecture on this subject, covering thirty-seven pages. Although desirous to correct any errors of opinion which he might have fallen into, and to accept new views suggested by advanced science and tested by clinical observation, yet he had found no reason to make any essential change of the views expressed in that lecture. But the paper which was the subject of discussion took the decided ground that puerperal fever was puerperal septicæmia. The author's view seemed plainly to be that metritis, phlebitis, peritonitis, and cellulitis were never seen in the puerperal woman except from the introduction of septic poison at a lesion in some portion of the genital tract. This pathological view had rapidly gained ground during the past few years as a result of the interest excited by German scientists, whose studies were largely of the micro-organisms in puerperal women in hospitals. Dr. Barker thought that no one had yet maintained that the process of parturition and the puerperal state exempted a patient from causes which may excite local inflammation in the non-pregnant woman, or would deny that parturition and attendant conditions, other than the absorption of septic poison, might be sufficient to excite local inflammation. It was his belief that in private practice, when no epidemic influence was

prevailing, twenty cases of local inflammation due to such causes would be met with to one due to septic absorption. He was in accord with Dr. Thomas, as expressed in a work published some years ago, regarding the peculiarities of the system of the puerperal woman. But he differed from the author in considering certain conditions which always followed normal labor as pathological conditions, which the speaker believed to be purely physiological. Certain quotations were made from that paper, going to show that the author regarded the lochia as an offensive fluid, made up of dead and decaying animal tissue, which poisoned the freshly-made and unprotected wounds that occurred during delivery. Dr. Barker asked the question, "Can it be true that the process necessary for the birth of the human race is always attended with the development of a deadly poison, whose malignant effects must inevitably prevent the spontaneous and kindly healing of such little traumatisms as always result from the process, and that therefore it is the duty of the accoucheur to take preventive measures of the character proposed? Does every parturient woman, in performing the function of maternity, like the scorpion that carries in its tail an agent for suicide if death is threatened by fire, physiologically generate an equally fatal poison in a corresponding locality, which the obstetrician must guard against by means that are most inconvenient, alarming, and not altogether free from danger?"

He would not now discuss the question, which he had before thoroughly discussed, whether there was a distinct disease called puerperal fever, aside from puerperal septicæmia. But it was well known that epidemics of such a disease occurred in hospital practice, and at times in rural districts where, for twenty-five or more years, not a single death had occurred in childbirth except from the casualties of labor. All we know of any disease is derived from the study of its etiology, its clinical phenomena, and the anatomical lesions. Now, the epidemic disease to which he referred differed in all characteristic points from what was known as septicæmia. It differed in its origin, mode of attack, symptoms, and anatomical lesions. The symptoms were not infrequently manifest a day or two before labor, the child being subsequently born alive, whereas in septicæmia the symptoms were never manifest before or during labor unless the fœtus were putrid. Puerperal fever arose from epidemic causes, from contagion and infection,—the latter from nosocomial malaria, autogenetic infection, and direct inoculation. Now, every physician had probably seen cases in which a decomposing placenta had remained in the uterus for a longer or shorter time, and yet without septic infection taking place. Bad ventilation, contact of septic material, etc., it was true, had a tendency to induce septicæmia in puerperal women as well as in surgical cases. But puerperal fever might develop from epidemic influences when the generally recognized causes of septicæmia were wholly wanting. In 1873 puerperal fever prevailed in certain of the best and wealthiest sections of the city of New York, while many of the filthiest and poorest districts, where influences which favor the development of septicæmia largely prevailed, were entirely, or almost entirely, exempt from puerperal fever; or, in the latter districts, the mortality from the disease was a third less than in the better neighborhoods. The patients whom he sent out of the city to be confined during this period all had a normal convalescence. Dr. Barker thought that those who studied the causes of puerperal fever from hospital practice exclusively must have one-sided and fallacious views. This was especially the case with persons brought constantly in contact with surgical septicæmia.

Dr. Barker then gave the hospital and general statistics of mortality from childbirth, going to show that exceedingly few women die from puerperal fever, and he thought it altogether improper, and even dangerous, to encourage the management of the woman about to be confined the same as a patient is to be treated who is about to undergo a capital operation: indeed, it would appear that if the importance were attached to Dr. Thomas's recommendations which he would seem to desire us to do, child-bearing ought to be made a penal offence in families whose income was not sufficient to enable them to carry out those requirements.

As to diagnosis, he did not regard the symptoms given by Dr. Thomas in their totality as pathognomonic of puerperal fever. They savored still too much of septicæmia. In private practice we had to treat the sequences of some form of blood-poisoning, which, however, was not necessarily septic poisoning; it was probably due, in the majority of cases occurring in private practice, to atmospheric influences, or to influences equally obscure in this as in other epidemic diseases. In the treatment, vaginal and uterine injections were of great service if the indications for their use were clearly seen in local signs, but they could not be recommended for every case on theoretical grounds and as preventive measures, as they might do harm by retarding cicatrization of slight lesions, by disturbing the patient, and parts which required rest, etc. Cases were related of puerperal fever in which the injections and the measures recommended in the paper by Dr. Thomas had been carried out, and after ceasing them, at Dr. Barker's suggestion, and substituting other measures, the temperature began at once to fall, and all the symptoms improved. His own experience with the methods advocated in that paper had not been favorable. Many years ago he tried them in several cases in Bellevue Hospital,

but they were given up, as they were less successful than other plans of treatment. Cold would do good in certain acute fevers, but in adynamic fevers it would do more harm in other respects than good by reducing the temperature. There was danger of pneumonia, and of other complications due to the weakening effect of continued cold when the patient's system was in this peculiar state. With regard to intra-uterine injections, it would be found, by turning to page 320 of his work on puerperal diseases, that he there, more than fifteen years ago, fully described methods for their employment. The method was employed in 1869, and published in 1874. The subject was also written upon and discussed at the American Gynæcological Society before the meeting took place at which Dr. Thomas described and advocated the method. Unless he should yet learn new facts and new arguments to change his views there expressed, he should have to die impenitent.

After the reading of his paper, the President said that, in consequence of a large number of gentlemen having shown their willingness to take part in the discussion, gentlemen whom all present would be anxious to hear, he had felt bound to restrict himself to a limited time, and to content himself merely with the enunciation of general principles, which he believed to be important, without entering largely upon the discussion of details. But there was one point to which he would beg leave now to refer. It was important to know the results of one's own actual experience and his observations, and to know what were his individual convictions when discussing a subject of this nature.

"In the early part of my professional career I began the use of vaginal injections for one week after confinement, the antiseptic used being Labarraque's solution. Nearly thirty years ago, when I first entered upon duty at Bellevue Hospital, it became the invariable rule to make use of these injections of Labarraque's solution for one week after labor. Subsequently, when carbolic acid came into use, this was substituted for Labarraque's solution, and in the work before alluded to a formula for the use of these injections is distinctly and fully given. This formula I habitually followed, not only in hospital but in private practice, in almost every case, until within the past three years. In 1881, during the session of the National Medical Congress in London, at a dinner-party I happened to be seated next to Thomas Keith, of Edinburgh, and, as my rule is to draw out of others and appropriate all the information I can, as well as to give what I may be able to do myself, I became greatly interested in what he told me with regard to his experience and his conclusions concerning the use of antiseptics in ovariotomy. This conversation was very suggestive to me, although nothing was said about antiseptic obstetrics, and led to great reflection on my part subsequently. I began to ask myself whether it was not possible that many of the interruptions and slight disturbances which I had observed to occur in my own obstetrical practice might not have been due to the carbolic acid. On returning, in the following September, to my practice again, I reduced the proportion of carbolic acid one-half, but still for a little time continued its use. But on further reflection, recalling the fact that, even in the strongest proportions in which I had used it, it was not sufficient to destroy the micrococci organisms which are supposed to be the real source of the disease which follows, I was led to ask myself whether it was not possible that nature had acted wisely in *bathing* with a fluid all the broken and lacerated tissues of the parturient canal, with that much maligned substance called lochia, and whether it was not more important to leave all this tract in perfect rest and quiet, as our surgeons tell us is practised in antiseptic surgery. Dr. Smith informs me that it was fully two years ago that I informed him that I should cease the routine use of vaginal injections after parturition. Since September, 1882, it has been my rule to direct, and I have often astonished my old nurses by the direction, never to use even vaginal injections unless they were expressly ordered; and this rule has been followed by my colleague and partner, Dr. A. A. Smith, and I am sure that he will sustain me in this assertion, that since September, 1882, not a single case has occurred in our practice with any interruption of the normal processes to give rise to any anxiety, or to call for more than our ordinary attendance,—namely, one visit daily for nine days. This result may be merely a happy and perhaps we may call it a lucky coincidence, but it seems to me significant, and I feel it a duty to state this fact, and I hope that those who may have applied such a test as this will give us the result of their observation and experience."

Dr. W. M. CHAMBERLAIN would only say a few words with reference to the tube which went by his name, and which had been referred to in Dr. Thomas's paper. He had not found the later tubes, three-eighths of an inch in diameter, too large; and one object which he had in view in making them of good size was that the anterior lip of the cervix might be raised with it at the time of the injection, thus giving free return-flow of the fluid. This suggested an important point in diagnosis in cases of puerperal septicæmia. He had never seen a case in which septic absorption had taken place from the uterus in which the cervical canal was not more or less patulous, and when it was not found patulous he was inclined to look elsewhere for the cause of the trouble.

Dr. H. T. HANKS read some remarks, and said that he believed that the paper read by

Dr. Thomas would have a most vital and lasting influence, and that many of the suggestions made by him would become the accepted rules of practice in the treatment of the puerperal patient. He thought the profession was willing to accept any plan which was likely to promise better results than those of the past. Dr. Hanks quoted certain statistics of the death-rate from puerperal fever in this city, and expressed it as his belief that had the methods of treatment suggested by Dr. Thomas been adopted, a great many lives would have been thereby saved. He himself had had no case, either in country or city practice, which he could not satisfactorily account for on the theory of septic poisoning. Regarding certain rules suggested by Dr. Thomas, he could not altogether agree. For instance, he would not make ante-partum vaginal injections. As to uterine injections, they should only be used when there was a strong probability that there was loose *débris* in the cavity of the uterus, which would be indicated, as stated by Dr. Chamberlain, by the partly-opened cervical canal. In confinement he insisted upon four assistants,—pure air, absolute quiet, judicious diet, and proper antiseptics.

Dr. W. T. Lusk thought that surgical septicæmia and puerperal fever were essentially the same process, and that much of the diversity of opinion on this point was due to a failure to take into consideration the different states of the system in the two conditions.

Confusion had further arisen from the fact that certain complications of the puerperal state, due to exposure of the patient to extraneous poisons, had been erroneously regarded as puerperal fever proper. With regard to the prophylaxis of puerperal fever, a good deal of difference of opinion had existed, which was due to a difference of opinion respecting its septic or non-septic origin, and the disagreement upon the latter point again was due to a failure to recognize a clear distinction between putrid intoxication and septicæmia proper, the latter being identical with puerperal fever. Putrid intoxication and septicæmia were two distinct conditions, depending upon the presence or non-presence in the decomposing fluid of certain micro-organisms. If, for instance, decomposing fluid containing long rod-like bacteria, but no round bacteria, were injected into the circulatory system of an animal, it would manifest certain disordered symptoms, but unless repeated injections were made, or a large quantity of the fluid were introduced at one time, the animal would finally recover. This was also true of the human subject, in whose body the rod-like bacteria were not capable of thriving and producing the effects witnessed in cases of septicæmia. Thus was accounted for the fact that certain physicians had gone from one confinement case to another without conveying puerperal fever, notwithstanding the fact that their hands had been in a puddle of decomposing matter contained within the uterine cavity of the former patient. But the round bacteria, unlike the rod-like variety, were capable of finding their way through the interstices of the tissues, of passing through the lymphatics into the blood-vessels, whence they could be distributed to the parenchymatous organs, form colonies, and give rise to inflammation; or they might be carried to distant parts by dislodged thrombi. But the rod bacteria, which were not in a very active condition, did not penetrate to a distance from the central wound at which they found entrance; they were feeble; they might make a little fight, get a slight hold on the tissues, advance a short distance from the wound, giving rise to local inflammation; but after getting a certain distance, owing to the resistance encountered from the active vital process of the tissues, they ceased to thrive, and died out before the inflammation set up spread and became general. In this way we could have a local cellulitis or peritonitis produced. But it was not his intention to discuss the pathological state: he only wished to speak of these two different forms of septicæmia, which called for very different kinds of treatment. These two forms were very frequently confounded, the treatment recommended for the one being also that recommended for the other; whereas, in practice, we must deal with each upon its own merits.

With regard to prophylaxis, he thought too great burden would be thrown upon the practitioner of medicine by insisting too much upon very small details. He should hardly expect great results from washing the furniture with antiseptic solutions. He said this with some diffidence, but it certainly had been impressed upon him powerfully by his experience in the lying-in hospital. He had seen many epidemics of puerperal fever, and there was a time when, in the hospital, they washed and scrubbed most vigorously; no pictures were allowed to hang on the walls, extra furniture was removed, the rooms were scrubbed with a five-per-cent. solution of carbolic acid, and yet he could not see that such precautions had the slightest influence upon the disease. Fumigation with sulphurous acid had since been substituted, and he supposed this was a precaution to be recommended before confining patients in houses in which diphtheria, scarlet fever, etc., had prevailed. In this connection he would state that a woman should never be confined in the room adjoining the water-closet. In normal confinement the uterus contracted upon the head and body of the child, and its cavity was not exposed to processes favoring decomposition, but in the vagina it was quite different; there we had heat, moisture, and air, the requisites for decomposition, and if any putrid process developed it was liable first to begin in the vagina, and from there it might creep upward

to the cervix and into the uterine cavity. This he considered an important point in practice, for it was certainly true that in the majority of cases if, when symptoms first developed, the vagina were thoroughly washed out, it would not be necessary to carry the injections up into the uterine cavity. The cause of the infection was not going to creep up into the uterine cavity until after a certain period of delay. Such was true in perfectly normal labor. But in cases in which the hands or instruments had been introduced into the uterus, or pieces of the placenta or membranes remained, rendering putrid decomposition possible, in such cases intra-uterine injections might be the direct means of saving the patient's life, and if under these circumstances symptoms of poisoning developed later, we might feel that we had not done our duty fully at the time of, or just after, labor. The physician should have washed out that uterus with some disinfectant fluid immediately after confinement. He was still inclined to favor carbolic acid, although in the course of a year he might be convinced of the superior advantages of bichloride of mercury. But there were certain cases in which washing out the uterus would not prove of the least benefit,—cases of true septicæmia, cases in which the round bacteria had already passed through the uterus, perhaps having already reached the peritoneal cavity. It would probably prove as useless in such a case to wash out the uterus as to continually sponge the arm after vaccination, hoping thereby to stop the progress of the vaccine virus which had already entered the system. If, however, there still remained within the uterus a puddle of putrid material, it should be removed by one thorough washing of the organ. While in Europe, he inquired as to what was the practice there with regard to washing out the uterus, and had found it to be substantially what he had just stated. The rule in Vienna was, in cases of puerperal fever, also to use uterine suppositories of iodoform and tragacanth; and he had imagined this to be an excellent idea, for while a student in that city the mortality in the lying-in wards had been five or six per cent., while the past summer, under present modes of treatment, the mortality had only been one-half of one per cent. But he found that in Prague, where they did not use the iodoform suppository at all, not a single death had occurred from septicæmia in eleven hundred confinement cases. The intra-uterine injection was not employed at Prague at present, although at one time, under the teaching of certain leading minds, it had been almost universal, and, as was then supposed, with the best results. Those results had since been shown not to have been so favorable, and the method had now been abandoned. Cleanliness in its minutest details constituted antiseptic treatment in the truest sense.

Dr. P. F. MUNDÉ had listened with a great deal of interest to the paper by Dr. Thomas, and to the discussion this evening, but he had felt at a loss to know what to say in case he should be called upon to speak. Since he first began to practise obstetrics, some eighteen years ago, he had seen a number of cases of puerperal fever in hospital and private practice. More lately it had become his custom to treat cases of puerperal fever locally, precisely as though the case were one of septic wound, just as a wound which gave rise to septic infection would be treated in any other part of the body, and he must confess that he had arrived at the conviction that puerperal fever was, properly speaking, puerperal septicæmia. He said he had arrived at this conclusion, and at the same time he wished to qualify the statement. Certainly, whenever he was called to a case in which he found an offensive discharge from the uterine cavity, attended by rise of temperature, preceded or not by a chill, he felt it his duty to wash out the cavity of the uterus; and if he failed to do this he felt that he had failed in his duty to himself and to his patient. Again, however, he had seen cases in which, in the entire absence of evidence of infection of the uterus or of the perimetrium, he could not help feeling that the condition was something different from what we found in cases of septic infection. He could not help feeling that there were cases in which we could not exactly place the source of the trouble to septic infection. He was obliged to subscribe, in short, to the views of the honored President, that there were some forms of puerperal fever which we could not call puerperal septicæmia. Regarding the etiology of puerperal fever, he had nothing to say, and yet the subject had of late been so much talked up that it seemed we would have to subscribe either to the view that puerperal fever was puerperal septicæmia, or else that there was a peculiar form of puerperal fever,—puerperal fever proper. At any rate, whenever he had a case of fever during the puerperal state, with offensive lochia, he took the risk of washing out the uterus; and, if it were not necessary, he felt that, if properly done, it probably would do no harm. As regards vaginal injections in prophylactic treatment, much had been said for and against. He himself had employed them, although he must admit that the objections which had been offered to the practice might have some foundation. Probably one of the chief reasons why he had permitted them was that the nurse and the patient commonly thought all had not been done that should have been done if they were neglected. He objected to the use of the Davidson syringe for making the uterine injections. Cases had been reported in which the fluid or air had been forced by it into the uterine sinuses, resulting in death. Certain other dangers from intra-uterine injections he thought should be

more forcibly emphasized than Dr. Thomas had done in his paper. The mere absence of discharge from the uterus did not contra-indicate the injections; indeed, it might be a special reason for employing them. This was illustrated by a case in which the discharge had ceased simply because the uterus had become anteverted and closed the outlet. He was doubtful whether it were an advantage to have a terminal opening in the Chamberlain tube. He agreed with Dr. Lusk, that when the temperature remained up in spite of the injections the victorious army had probably gone on into the general system, and our washings simply brought away the rear-guard, and were liable to do more harm than good if continued.

Dr. T. GAILLARD THOMAS was then requested to close the discussion, as the hour was advancing, and said that when a young lad he saw a man tried for his life for the crime of murder. When the case had been presented, the district attorney, who was a very florid orator, got up and made a speech of two hours' duration. All present were very anxious to hear the counsel for the prisoner, who was known to be a very eloquent man. He said, "Please your honor, the case is closed. I rest it there. The gentleman on the other side has made the speech in favor of the prisoner which I intended to make." Dr. Thomas thought such meetings as these —that on the 6th of December and the one to-night—would result in good.

From the very grievous error which it seemed he had made in bringing to the profession, for its adoption, certain views concerning the subject under consideration, he really thought he would do well in preferring gold to silver to-night, by preferring silence to speech. But perhaps he had better say a few words in summing up.

Our honored President had been very guarded in pointing his little attack upon his paper, and seemed to fear that the author would take exception to what he said; but it would take a good deal more than such a discussion to break the ties of friendship of thirty years' duration, or to cause him to take exception to a man whom he had always found, in the past as well as the present, perfectly fair, generous, and courteous. But he had played to-night with the two-edged sword, ridicule. When I found he introduced that into his subject I felt glad, for ridicule is one of the most powerful of weapons, but it is the poorest of arguments. And I said to myself, He is very weak to-night; he totters on his pedestal. Were he not weak, he would not show—what carries pain to my heart and to the heart of every man in this assembly—an irascibility, an irritability, which is entirely uncharacteristic, and I should not be able to recognize, as others present must recognize, the utter want of logic which runs as a stream throughout that paper. But I shall not detain you long to-night, gentlemen. I have very little to say. I said all that I had to say on the 6th of December. There are only one or two points which I want to touch upon. First, with regard to the pathology which I advocated in that paper. The President seemed to object to the fact that it is not the worn-out pathology of fifty years ago, perhaps. Or we will take more recent times, ten years ago, or even five years ago, upon a subject in which we are advancing so rapidly. Dr. Billings, in some directions some time ago for writing, said, "Have something to say, say it, and get done." Now, had I had nothing to say but what all the text-books contain, had I not had some opinions of my own, I should not have brought that paper before the Academy.

Dr. Thomas thought the paper of this evening had a tendency to magnify certain statements contained in his paper in such a manner as to make what otherwise would have been self-evident truths appear in a false and ridiculous light. He then reviewed some points in the pathology of puerperal septicæmia as he had given it, and which had been criticised by the President, and said he had merely stated that the lochial discharge was a material ready to take on the development of micro-organisms, as mentioned by Dr. Lusk, and that the tissues after parturition were in a state favoring the possibility of the development of germs and their absorption. He considered the pathology given in his paper as abreast of the times, and referred to the labors of German pathologists, and quoted from a comparatively recent number of the *British Medical Journal* (which he had brought for another purpose), in which essentially the same views regarding pathology were advocated by three different writers. With regard to the symptomatology, as with regard to the pathology, the scope of the paper, the title of which was "The Prevention and Treatment of Puerperal Septicæmia," did not permit of more than a rapid sketch of what usually took place when we were called to see a case of puerperal septicæmia. He thought that many of those present, who had listened to his course of lectures, would readily believe that had he written specially upon symptomatology and pathology he would have treated of these points in a more complete and scientific manner.

As to prevention and treatment, he had heard a great deal of talk about some little details, as, for instance, the kind of tube to be used, the position of the patient, etc., matters of very little moment as compared with the great question whether we should adopt the general plan of treatment advocated in his paper, or whether we should continue the old methods of applications of turpentine over a ballooning abdomen, etc.; whether or not micro-organisms may and do enter the system at some point along the genital canal.

Dr. Thomas then spoke of the methods

which he had suggested for avoiding the occurrence of puerperal disease, and which some seem to have taken exception to as being impracticable. To carry out the first requirement, regarding the preparation of the lying-in room, it was only the work of two or three hours for a laboring-woman. But in making rules it was necessary always to give a high, and not a low, standard. He would admit that a woman might be confined in a dirty room and yet have a perfectly natural confinement; but he thought it did good to get the mind of the obstetrician into the proper channel, which was that of cleanliness, three times repeated.

Coming to the second rule, he thought this also quite practicable; and it was only this morning that he had bathed his body and washed his hair and beard with a solution of boracic acid, according to the rule laid down, having attended a case of puerperal septicæmia yesterday. After going over the other rules, to which it would seem that there could not possibly be any valid objection offered, Dr. Thomas spoke of the administration of ergot, which it had been his custom to do for some years, and with apparent benefit, and then of vaginal injections, and said he must confess, in view of the evidence which had been brought out in the discussion, that he felt a little weak on that point. As Dr. Mundé had said, it was his usual habit to make vaginal injections, but he was willing to give it up at any time he became convinced that it was faulty. Only recently he omitted it in a case of deformed pelvis in which labor was brought on at the eighth month, and the woman did perfectly well. In laying down the rules in the paper which he had read, he simply gave what was his practice and what seemed to him to be desirable; but he was willing to discard any part of them as soon as they were shown to be rash or injurious. With regard to intra-uterine injections, he was, as stated in that paper, and in as plain and good English as he could command, utterly opposed to them, except where there was good and sufficient cause; and he had stated as strongly as he could do the dangers which might attend the use of such injections. He was not aware that Dr. Barker had made use of injections as stated, else he certainly would have given him credit.

Dr. Thomas then quoted the statistics given by the speakers of the evening and by others, going to show that puerperal fever was not of such infrequent occurrence as one might be led to suppose, and this was especially the case where antiseptic precautions were not observed. Since the 6th of December he himself had seen as many as five cases of undoubted puerperal fever in private practice, and this was not above the usual number for an equal period of time. He then gave an instance going to show that statements made from memory by physicians, to the effect that out of a large practice for a great many years they had not had a single case of puerperal fever, were very unreliable. They meant to tell the truth, but their memory failed them.

Dr. Thomas closed his remarks by saying that he was not dogmatically inclined to the rules which he had laid down. Not at all. He was willing to alter them as soon as it was shown that they were objectionable.

NEW YORK STATE MEDICAL SOCIETY.

THE seventy-eighth annual meeting of the New York State Medical Society was very largely attended, and the programme of papers included a large number which had to be read by title in order to finish the exercises in the prescribed period of three days (February 6, 7, and 8). Dr. Hutchins, of Brooklyn, presided, and delivered an able address upon "The Reciprocal Attitude of the Medical Profession and the Community." Although the President was in favor of repealing the resolution of last year with regard to the Code of the American Medical Association, his wise counsel did not prevail, but the action of last year was confirmed by a two-thirds vote (124 to 105). As an evidence of a change of sentiment upon Code questions, the "gentleman and physician code" offered by Dr. Roosa last year, which was then received with so much applause, was again offered, according to promise, but it was received with so little favor that it was withdrawn by the mover of the resolution.

The Committee on Legislation reported in favor of the Examining Board Bill, recommending that the bill known as Assembly Bill No. 120, now before the Legislature, receive the sanction of the Society, and that the committee be authorized to urge its passage. The bill is entitled "An act to establish the medical faculty of the University of the State of New York, to regulate the licensing of practitioners of physic and surgery, and to further regulate the practice of physic and surgery."

It provides that on or before the 1st of June next the Governor shall appoint the medical faculty of the University, to consist of nine members, who shall be authorized practitioners of physic and surgery, but not connected with any medical school or college which grants the degree of M.D., three of such members to serve for three years, three for four years, and three for five years. It is made the duty of said faculty to examine all applicants for license to practise in the various branches of medicine and surgery, meeting for that purpose semi-annually. Power is given to refuse or revoke licenses. The bill also provides for registry of practitioners, and penalties are specified for violations of the law, or the making of false statements to secure licenses.

An unexpected opposition was encountered to the report, another act (known as the Medical College Bill) being offered as a substitute. It was finally decided not to take final action upon either bill, but the committee was instructed to communicate with the various county medical societies, the Committee on Legislation being increased for this purpose, and to report at the next meeting.

A resolution was adopted memorializing Congress in favor of a fire-proof building for the museum and library of the Surgeon-General's office, and asking for the prompt publication of the catalogue of the library, and recommending that proper provision be made for the future increase of the library.

The project of raising a fund to erect a suitable memorial to the late Dr. J. Marion Sims in the city of New York was brought to the attention of the Society.

During the morning of the first day the following papers were read and discussed: "Two Unusual Cases in Obstetrical Practice," by Dr. W. C. Wey, of Elmira; "A Case of Double Hare-Lip," by Dr. J. P. Creveling, of Auburn; "Prophylaxis of Summer Complaints of Children," by Dr. D. Little, of Rochester; "Canalization as applied to Amputation of the Female Breast to assure Primary Union under One Dressing," by Dr. A. G. Gerster; "An Operation for Correcting Deformity of the Auricle," by Dr. O. D. Pomeroy, of New York; "Poisoning by Potassium Chlorate," by Dr. G. B. Fowler, of New York.

During the afternoon session the following were read: "The Establishment of Hospitals in Small Cities," by Dr. E. H. Parker, of Poughkeepsie; "Congenital Lipoma," by Dr. A. Jacobi, of New York; "The Value of Electricity in Diagnosis," by Dr. L. E. Felton, of Potsdam; "A New Method of Partial Extirpation of the Cancerous Uterus," by Dr. E. Van De Warker, of Syracuse; "Orbital Cellulitis," by Dr. T. R. Pooley, of New York; "Operations for the Closure of Hard and Soft Palate, with Results," by Dr. Albert Vanderveer, of Albany; "The Cause of Sympathetic Serous Iritis, with Remarks," by Dr. D. Webster, of New York; "A Plea for the Pharmacopœia," by Dr. L. Johnson, of New York; "Horse-hair Sutures and Drainage," by Dr. S. Lewis, of New York.

On Wednesday (second day) the reports of committees and the discussion of the Medical Examining Board Bill occupied most of the time. Dr. W. Mittendorff, of New York, read a paper describing "Foerster's Method of Ripening Cataract;" Dr. W. F. Sheehan read one on "House Sanitation as it is and as it should be." After a number had been read by title, Dr. Milton J. Roberts read a paper entitled "The Mechanical Treatment of Hip-Joint Disease," and Dr. A. M. Phelps, of Chateaugay, read one on "Synovitis of Knee- and Ankle-Joints." Dr. C. L. Dana, of New York, reported a number of cases of "Morbid Somnolence."

On the third day Dr. E. L. Partridge, of New York, read a paper on the "Management of Face Presentations;" Dr. A. Jacobi read a communication relative to the "Use of Arsenic and Digitalis in Phthisis."

The report of the nominating committee was then received, and the following officers were elected for the ensuing year:

President.—Dr. B. F. Sherman, of Ogdensburg.

Vice-President.—Dr. P. R. H. Sawyer, of Bedford.

Secretary.—Dr. William Manlius Smith, of Syracuse,

Treasurer.—Dr. Charles H. Porter, of Albany.

Censors.—Southern District: Drs. F. A. Castle, G. H. Fox, David Webster. Eastern District: Drs. E. D. Ferguson, N. L. Snow, Le Roy McLean. Middle District: Drs. Alonzo Churchill, J. K. Chamberlain, Robert Frazer. Western District: Drs. T. F. Rochester, B. L. Hovey, Theodore Dimon.

Syracuse University, Medical Department.—Dr. J. P. Creveling.

Committee of Arrangements.—Drs. S. B. Ward, W. S. Ely, E. L. Partridge.

Committee on By-Laws.—Drs. W. C. Wey, Elmira, Alexander Hutchins, Brooklyn, and William M. Smith, Syracuse.

Committee on Hygiene.—E. V. Stoddard, Rochester; Caleb Green, Homer; Edwin Hutchinson, Utica; William H. Bailey, Albany; A. N. Bell, G. J. Fisher, William T. Sheehan.

Committee on Medical Ethics.—Drs. A. Jacobi, New York, Arthur Matthewson, Brooklyn, and J. W. Whitbeck, Rochester.

Committee on Prize Essays.—Drs. W. M. Potter, Alexander Hutchins, W. S. Ely.

Committee on Publication.—Drs. William M. Smith, Syracuse; Charles H. Porter, Albany; H. D. Didama, Syracuse.

Permanent Members.—First District: Drs. Daniel Lewis, A. V. B. Lockrow, V. P. Gibney, New York; Allan McLane Hamilton, S. Sherwell, Brooklyn. Second District: Drs. A. Huhne, Ulster; J. Q. Adams, Putnam. Third District: Drs. Milford L. Bates, Columbia; S. S. Cartright, Delaware. Fourth District: Drs. L. C. Dodge, Clinton; J. E. Burdick, Fulton. Fifth District: Dr. H. W. Carpenter, Madison. Sixth District: Drs. M. J. Baker, Steuben; M. D. Spence, Chenango. Seventh District: Dr. Alfred Mercer, Onondaga. Eighth District: Drs. C. S. Starr, Monroe; M. S. Kittinger, Niagara.

Honorary Member.—Dr. William G. Bronson, Connecticut.

Also, the following delegates:

To the International Medical Congress at Copenhagen.—Drs. S. O. Vanderpoel, New York; A. M. Phelps, Chateaugay; J. O. Roe, Rochester; A. Vanderveer, Albany; J. P.

OLEATES.

For a number of years physicians have complained of the slow absorption and uncertain action of certain ointments intended to cure various cutaneous diseases. These failures seem to have been due to the fact, that many of these ointments were little else than mixtures of lard with the medicinal ingredient, some of which were readily absorbed.

It was suggested that chemical compounds of the desired medicinal ingredients with Oleic Acid might prove more active and more certain in their effects, because more readily absorbed.

Experience seems to have demonstrated the correctness of these opinions; and the writings of prominent dermatologists agree remarkably in ascribing favorable results to the proper use of Oleates.

OLEATES ARE SUPERIOR TO OINTMENTS BECAUSE OF

1st. Their deep penetration.
2d. Their freedom from rancidity.
3d. Their cleanliness of application.
4th. Their great economy.

We believe that the Oleates will supersede many of the old-style Ointments. At all events, the testimony of physicians and the rapid and steady increase in the demand have led us to give the matter considerable time and study.

In response to the request of many physicians, we have published a small pamphlet containing the latest information upon the medicinal uses of the Oleates, as well as monographs on various other preparations which are demanded by the profession. We shall be pleased to send this little book to any physician or pharmacist who may desire it.

THUS FAR THE FOLLOWING OLEATES HAVE BEEN DEMANDED:

Oleate of Strychnine, 2 per cent.	Oleate of Mercury, 5 per cent. and Boracic, 2 per cent.
" " Strychnine, Powder.	" " Mercury, 20 " " Boracic, 2 " "
" " Quinine, 2 per cent.	" " Mercury, Powder.
" " Quinine, Powder.	" " Iodine, 2 per cent.
" " Morphine, Powder.	" " Iodine, Powder.
" " Iron (Ferric), Powder.	" " Iodoform, 2 per cent.
" " Iodine, Powder.	" " Iodoform, Powder.
" " Mercury, Powder.	" " Iodoform and Boracic, 2 per cent.
" " Mercury, 2 per cent.	

We will simply state that we have given much attention to the production of our manufacturing processes for the Oleates, and that we can furnish a full line of these preparations of the best quality.

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Creveling, Auburn; W. H. Bailey, Albany; Alexander Hutchins, Brooklyn; A. Jacobi and George F. Shrady, New York.

To the Massachusetts Medical Society.—Drs. G. G. Monroe, St. Lawrence; G. G. Hopkins, Kings; Henry March, Albany.

To the Connecticut Medical Society.—Drs. M. L. Bates, Columbia; S. H. Freeman, Albany.

To the Canadian Medical Association.—Drs. L. C. Felton, C. M. Wilson, Conant Sawyer, F. C. Curtis, D. V. O'Leary.

To the British Medical Association.—Drs. Fordyce Barker, Harvey Jewett.

To the Ontario Medical Association.—Drs. H. R. Hopkins, Lucien Howe.

To the Pennsylvania Medical Society.—Dr. C. L. Stiles.

To the Vermont Medical Society.—Drs. James L. Little, Joseph Lewi.

The customary banquet was held on the evening of the second day, which was largely attended, and where great harmony prevailed, forming a marked contrast to the meeting of the Society of the evening before during the discussion of the Code question.

ALBANY, February 9, 1884.

GLEANINGS FROM EXCHANGES.

THE DIGITALIS GROUP.—At the November meeting of the Royal Medical and Chirurgical Society of London, Dr. Sydney Ringer and Dr. Harrington Sainsbury contributed a paper containing some investigations into the Action of the Digitalis Group, of which the following is an abstract. Digitalis is taken as the type of a group of drugs whose influence is exerted mainly on the circulatory system. The facts of chief importance in this action are: 1. The arrest of the heart in systole (if the dose be sufficiently large). 2. The raised blood-pressure which obtains throughout till close upon the final systolic arrest. Whilst the spasm of the heart is universally recognized as the result of the digitalis action, and as caused by direct action of the drug on the cardiac tissue, there is doubt both as to the condition of the arterioles under the influence of the drug, and as to whether the influence be direct or indirect. Digitalis action upon the heart may be defined as the production of continuous spasm of the heart-muscle by direct action of the drug upon this tissue. It is pointed out that this spasm must not be of the nature of a tetanus,—*i.e.*, of a fusion of adjacent beats; and, further, that it may affect either the whole heart or a limited portion of the same, according as the drug is applied to the whole heart or to a limited portion. Thus defined, the already very large group of bodies classed by Schmiedeberg under the heading digitalis becomes yet larger, and will include, among others, the caustic alkalies and barium salts. Experiments are recorded in which an artificial saline solution was circulated through the vessels of the hinder extremities of a tortoise whose brain and spinal cord had been completely destroyed. The experiments were so arranged that the rate of flow could be measured, and so soon as a uniform rate of flow had been established the drug was added to the circulating fluid. The results obtained with digitalis were both uniform and striking: invariably on the addition of the drug the circulation became slowed, even to the extent of almost complete stasis. Similar experiments were made with the following members of the digitalis group: strophanthus, dyak poison, convallamarin, and scillitine. In the case of each of these drugs evidence of constriction of the vessels was obtained in the shape of a slowed circulation. Digitaline, however, ranked as by far the most active of the series. Similar experiments were made with hydrate of potassium, and with the carbonates of potassium and sodium, and sodium bicarbonate, which, with the exception of the latter, gave like evidence of constriction of the arterioles. Experiments carried on simultaneously with the above on the excised frog heart showed, in the case of each of the above drugs, the production of more or less persistent spasm, with the notable exception, however, of sodium bicarbonate, which gave none. Experiments then followed which sought to determine whether the calibre of the vessels, in addition to being directly influenced by these drugs, could be affected by them through the nerves. Digitaline was alone experimented with. The results were purely negative. Finally, to meet the suggestion as to the action of the drugs on the skeletal muscles, experiments were made with frogs, given quantities of solutions of digitaline, strophanthus, dyak, scillitine, barium chloride, and caustic potash and soda being injected. The results showed the first five to be notable muscle-poisons, the muscles rapidly dying and losing their excitability; indeed, even before the death of the animal a very marked diminution of muscular irritability was in several cases observed. Comparing the actions among each other, it was noted that strophanthus and dyak poisons acted much more powerfully on the skeletal muscles than did digitaline. To sum up, the argument, briefly stated, is as follows. Starting from the systolic digitalis heart, which is admittedly a result of direct action of the drug on the cardiac muscle, we have found: 1. That for the other members of the digitalis group here examined a like action obtains. 2. We have suggested that the local action on the heart may serve as the definition of digitalis action; this accepted, we have pointed out that Schmiedeberg's already large group must be still further enlarged. 3. Arguing from this action on the muscular tissue of the heart, we have inferred that the action on the muscular tissue of the arterioles will be similar, an inference verified by actual experi-

ment. 4. So far as our experiments go, we do not find that these drugs influence the calibre of the vessels indirectly through the nervous system. 5. We have pointed out that many of the digitalis group are notable muscle-poisons, and that the tissue of the heart, standing functionally midway between the striped and unstriped muscular tissues, may permit of the inference that a marked action of the drug on the tone of the heart would indicate a similar effect on the tone of the vessels, whereas a marked action on the cardiac beat would indicate like action on the skeletal muscles.

TREATMENT OF WHOOPING-COUGH BY CROTON CHLORAL.—Dr. W. C. Webb, of Bryantsville, Ky. (*American Practitioner*), has employed croton chloral in whooping-cough with much benefit. It does not derange the digestive organs, nor affect the vital nervous centres. Patients frequently fall asleep on their chairs after using it. On taking this remedy, the patient must be watched lest toxic symptoms be manifested. A child from one to two years old may take one grain of the preparation every four hours. One ten years old may take two grains as often. After the first week the dose should be lessened and given at longer intervals. Should there be much gastric irritability, or should the paroxysm be very severe, a few whiffs of chloroform may be given in advance of the croton chloral. This may be repeated only three or four times.

The following formulæ are given for its administration:

℞ Croton chloral, ʒj;
Tinct. cardamom. comp.,
Glycerin, āā, ʒij.

Sig.—One-half teaspoonful every four hours for a child two years old and under.

Or, ℞ Croton chloral, ʒj;
Tinct. belladon., ʒij;
Tinct. cardamom. comp., ʒij;
Glycerin, ʒiij. M.

Sig.—Dose: One-half teaspoonful.

—*Medical Summary.*

TREATMENT OF VASCULAR TUMORS WITHOUT OPERATION. — Floriani has recently treated six cases of telangiectasis with sublimate collodion (fifteen per cent. solution). The collodion is put on in four layers by means of a camel's-hair brush, each layer being allowed to dry thoroughly before the next is applied. On the fourth day the edges are raised and a second series of four applications are made, this being repeated every fourth day until the swelling disappears and the edges are depressed. After the crust falls off, the place seems depressed and reddened, but soon resumes its normal color. This treatment is painless, and requires only one or two months to cause an angiomatous tumor to disappear. (*Allgem. Wien. Med. Zeit.*, No. 32, 1883.)—*The Practitioner.*

RECOVERY FROM TETANUS UNDER ARSENIC AND GELSEMINUM.—Dr. E. J. Beall, of Fort Worth, Texas, reports a case of a negro man who was suffering from a railroad crush of the toes, and who had symptoms of tetanus when he was admitted to the hospital. The gangrenous toes were removed by an amputation through the metatarsal bones, but the tetanus continued. The Hodgen treatment of Fowler's solution, eight drops, and five drops of fluid extract of gelseminum, were given every four hours for twenty-four or thirty-six hours, when, the effects of the latter drug being evident, it was discontinued, the arsenic being gradually withdrawn within the next fortnight. The wound healed kindly, and the patient made a good recovery.—*Texas Courier-Record of Medicine.*

A somewhat similar case of traumatic tetanus successfully treated by arsenic is reported (*Weekly Medical Review*) by Dr. Bennett, of Fort Smith, Arkansas.

SALICYLATE OF SODIUM IN SEPTIC POISONING.—Dr. S. H. Stout, of Cisco, Texas, in removing a malignant tumor, accidentally pricked his finger, and a few days later inoculated it with pus while dressing the wound. After a couple of days' malaise, marked septic symptoms set in, with chill and a high fever; the arm was swollen to the shoulder-joint; the poisoned finger was gangrenous. He took salicylate of sodium, ten grains every half-hour, which after four doses produced profuse diaphoresis. Subsequently following routine treatment, he entirely recovered, with full use of arm and hand, except the flexor tendons of the finger, which had sloughed away.—*Texas Courier-Record of Medicine.*

CIMICIFUGA IN EPILEPTIFORM NIGHTMARE.—Dr. Ed. M. Small, of Eastport, Me., sends us the report of a case occurring in his practice almost identical with one published recently in these columns in the report of Professor H. C. Wood's clinic. The disease was epileptiform nightmare, and it was cured in Dr. Small's case by half a teaspoonful of powdered Cimicifuga racemosa being administered at bedtime. The paroxysms at once ceased, and there had been no return in a lengthy period of observation. He also was ordered to partake of only a light supper each night, and to avoid excitement as much as possible.

ANTAGONISM OF CHLORAL AND STRYCHNIA.—In a communication to the *Texas Courier-Record of Medicine*, Dr. W. B. Brooks reports a case of accidental strychnia-poisoning successfully treated with chloral, the remarkable feature being that, a few months later, the same patient took an overdose of chloral, which rendered her perfectly comatose; but, under the hypodermic use of strychnia, she rallied soon.

MISCELLANY.

PHOTOGRAPHY IN HOSPITALS.—Most of the French hospitals, according to our contemporary, *Engineering*, have now a photographic studio attached for photographing the sick persons at different times. The rapid dry-plate process is employed, and Prof. Charcot, of La Salpêtrière, has devised an electrically worked camera, which is very useful in taking a series of views in rapid succession. Certain classes of patients are photographed on their entry into the hospital, and at regular intervals afterwards. In cases of hysteria, for example, it is interesting to note the original contractions and compare them with succeeding ones. The photographs are placed in an album for study of the disease, and for comparison with others taken from other patients. In this way the leading features of the disease will be recognized. The new printing processes also enable these photographs to be copied, and distributed to other hospitals and to medical men. Micro-photography, or the photographing of microscopic objects, is also a valuable branch of hospital-work which is becoming better recognized every day. The apparatus of Prof. Charcot consists of a camera with a movable aluminium shutter, controlled by an electro-magnet and clock-work. A key and battery send an electric current through the magnet at the will of the operator, and working the shutter exposes an objective to the object. The photographer controls the apparatus by his hand, and, with his finger on the key, watches his patient until the desired moment arrives, then presses his finger and exposes the plate for the instant required to take the likeness. When a regular series of views in rapid succession are required, the hand-key is replaced by an insulating barrel, set round with metal contact-pieces like a commutator, and these pieces make contact with a contact-spring as the barrel revolves by clock-work. These metallic pieces are made of a triangular form, so that, when a short exposure is required, the spring is placed so as to rub over them towards the apices of the pieces; and, when a longer exposure is required, it is caused to rub over them near the bases. The metronome, or automatic mercury current-interruptor, of M. Gaiffe is also applicable to this camera as an automatic key.—*The British Medical Journal.*

TOBACCO AS AN ANTIDOTE IN STRYCHNIA-POISONING.—A woman having taken the contents of a packet of "Battles' Vermin-Killer" (containing strychnia) was found suffering with opisthotonus and frequent tetanic convulsions. The medical attendant administered half an ounce of sulphate of zinc, which produced free emesis. He then made an extemporaneous infusion of tobacco, which was strained through some muslin and administered. In about ten minutes vomiting again ensued, but not till the paroxyms were reduced to one in every three minutes and a half. A second draught was similarly prepared and administered, which was retained for a longer period, the convulsions decreasing in frequency and intensity. She was then ordered warm milk and beef-tea every two hours, and made a good recovery. The case is reported by Dr. Burton, of Birmingham, who also directs attention to the anomaly of the State paying a fee to the coroner and undertaker in these cases should they die, but giving no remuneration at all to a physician whose skill averts fatal consequences.

[The adoption of some plan similar to that of the Night Medical Service of Paris might solve such questions, the State becoming responsible for the physician's fee if he is summoned by the police to attend such a case. —ED. P. M. T.]

ELECTRIC LIGHT FOR MICROSCOPY.—At the Illinois State Microscopical Society meeting, held November 9, 1883, Dr. Mercer, of Chicago, exhibited two small electric lamps for use with the microscope. They are miniature incandescent Swan lamps, capable of giving respectively two and one-half and four candle-power. Their size is not larger than a pea, and the shape of one is globular and that of the other somewhat conoidal: they are used, the one immediately beneath transparent objects, and the other immediately above opaque objects. The incandescence can be sustained by four Leclanché cells for a period of half an hour, or by means of a storage apparatus, which Dr. Mercer also exhibited, for a period of twelve hours. The doctor claims a superior clearness with this means of illumination over that which is obtained by much more expensive and complicated devices. The lamps were imported from London, England, and the storage-cell was constructed at Dr. Mercer's suggestion, with the counsel of Mr. Johnson, of the Western Electric Company. The storage-cell can be readily charged from any dynamo.—*Weekly Medical Review.*

THE LANCET ON THE USE OF THE TELEPHONE FROM A MEDICAL POINT OF VIEW.—As if the telegraph and the post-office did not sufficiently invade and molest our leisure, it is now proposed to medical men that they should become subscribers to the telephone company, and so lay themselves open to communications from all quarters and at all times. It must be admitted that this would have its conveniences. The only fear we have is that when people can open up a conversation with you for a penny, they will be apt to abuse the privilege; and that to have a dozen telephonic consultations in one day, or conversations that might be thought to supersede a consultation, would be a doubtful addition to one's advantage or repose. Be this as it may, it seems not improbable that we

are on the eve of a great development of the telephonic system in London.

BACILLIPHOBIA.—Herr Oberprofessor Keimerzeuger von Verdammtnarrburg, and Professor Coccischlächter, it is claimed, have recently made some remarkable discoveries in disease-germs. For instance, the bacillus of gout flourishes on green-turtle soup, while the bacterium of colic finds a favorable soil in the green apple; tubercle-bacilli flourish on boiled cabbage, but perish on moist sauerkraut. By a course of persistent diet of the latter article, under the direction of the Herr Oberprofessor, some of the assistants were saturated up to the point of insusceptibility,—a discovery which will probably put an end to the cavils at the failure of these researches to yield practical results. Most startling of all is Herr Keimerzeuger's latest discovery, which is of the greatest importance to the human race; indeed, its perpetuation may be said to rest upon it; but for this we must refer to the original communication from *Riechschwamm* which appeared in the *Medical News* (February 16), and which is written in a style of convincing candor by one who evidently does not belong to Verdammtnarrburg himself, but is an American flourishing a *nom-de-plume*.

NOT ON THE LIST OF THE ROYAL COLLEGE OF LONDON.—The new attendant of the watering-place bookstore stood behind the counter, with his head a little on one side and a white handkerchief around his neck, when a dainty summer sojourner tripped in, and, fixing her blue orbs upon him, asked, "Have you got a 'Newport Aquarelle'?" To which, with a thankful smile, he replied, "No, marm; I don't think it's nothin' but a common bile."—*American Druggist.*

SOME time since, a Mr. Seybert, of this city, left a legacy of fifty thousand dollars to the Literary Department of the University of Pennsylvania for the establishment of a chair of Intellectual Philosophy, with a special request for scientific investigation of the subject of spiritualism. It is understood that a commission, appointed for the purpose, has been pursuing some researches under the direction of its chairman, Prof. William Pepper.

AN almost unexampled occurrence has taken place near Venice,—a triple suicide. The victims were three sisters of good family, one suffering from approaching blindness and another from epilepsy, but the third "a young lady of extreme grace and beauty," who had announced her intention of not surviving her sisters. Their last act was to place a wreath of flowers upon their mother's tomb. This is "a riddle of the painful earth" indeed.—*The Press.*

UNSKILFUL medicine-men have no place among the Piute tribe of Indians. When one of them loses three patients consecutively he is sent to join them in the happy hunting-grounds. This penalty has just been inflicted on Ma-sho-go, the late chief medicine-man, at Buffalo Meadows, who was shot to death.

THE reception given by the Jefferson College Alumni Association to Professor Parvin at the St. George Hotel on the 28th ult. was very largely attended. Addresses were made by Professor S. D. Gross, Judge Ludlow, and Mayor King.

THE annual meeting of the Alumni Association of the University of Pennsylvania was held on the 31st ult., in the chapel. An interesting and witty address was given by the President, Dr. William Hunt.

NOTES AND QUERIES.

ERRORS CORRECTED.

IN the pamphlet containing "Proceedings of the Alumni Society of the University of Pennsylvania for 1882," recently sent to members, on page 15 there is an error which should be corrected through the *Times*, as many of your readers have received copies. The cost of "Morris Plains Hospital" is there given as $800,000, when it should be $2,800,000.

HIRAM CORSON.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM FEBRUARY 3, 1884, TO FEBRUARY 16, 1884.

PERIN, GLOVER, LIEUTENANT-COLONEL AND SURGEON, MEDICAL DIRECTOR.—Is granted one month's leave of absence, with permission to apply at Division Head-quarters, Missouri, for an extension of one month. S. O. 16, Department of Dakota, February 9, 1884.

To be Assistant-Surgeons, with the rank of First Lieutenant, to date December 3, 1883:—William D. Dietz, Walter W. R. Fisher, William Stephenson, Adrian S. Polhemus, John L. Phillips, Reuben L. Robertson, William C. Borden, Edgar A. Mearns, Guy L. Edie, William D. Crosby, William L. Kneedler, Charles M. Gandy, Charles S. Black, James E. Pilcher, Alonzo R. Chapin. S. O., A. G. O., Washington, February 11, 1884.

BREWSTER, WILLIAM B., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Resignation accepted, to date February 7, 1884. S. O., A. G. O., Washington, February 11, 1884.

WILSON, GEORGE F., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty at Fort Walla Walla, Washington Territory. S. O. 14, Department of the Columbia, February 5, 1884.

LIST OF CHANGES IN THE MEDICAL CORPS OF THE NAVY FROM FEBRUARY 2, 1884, TO FEBRUARY 16, 1884.

Surgeon W. K. VAN REYPEN from the U.S. steam-ship "Powhatan" to the Navy Department as Assistant to the Bureau of Medicine and Surgery, and Acting-Chief of that Bureau.

Surgeon A. A. HOEHLING from special duty at Washington to the "Powhatan."

Medical Director S. F. COUES to the Naval Medical Examining Board at Philadelphia, March 3, as the relief of Medical Director P. J. HORWITZ, who retires on that date.